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02-8702-10-PA

POTENTIAL HAZARDOUS WASTE SITE

PRELIMINARY ASSESSMENT

Kodak Park Division

NYD980592497

Site Name

EPA Site ID Number

Weiland Road, Rochester, New York

02-8702-10

Address

TDD Number

Date of Site Visit: 2/24/87 Off-site Reconnaissance

SITE DESCRIPTION

Since the late 1940's, the Kodak Park Division of the Eastman Kodak Co. has owned and operated an industrial landfill located in Greece, New York. The existing industrial landfill is bounded by Weiland Road on the north, the abandoned Erie Canal bed on the south, Latona road on the west, and the Kodak service road on the east. It encompasses approximately 20 acres, however, a photo dating back to 1930 shows the total area is approximately 45 acres. In 1954 Kodak installed a shallow french drain on the south eastern portion of the site to collect excess surface water. A chlorination station was initially installed near the center of the site to alleviate an odor problem caused by leachate collected by the drain system. The chlorination station was moved near Latona Road in the late 1960's and until 1979, chlorinated part of the surface runoff prior to its discharge into Paddy Hill Creek. In 1979, Kodak terminated the chlorination and began discharging leachate to the King's Landing Water Purification Plant.

The present landfill is reportedly used for inorganic material only. Ninety percent of the waste contains demolition rubble, excavated material from construction projects, fly ash, cinders, and incinerator ash. The remaining ten percent is non-combustible rubbish, glass, heavies from building 145 refuse incinerator, asbestos insulation, and grit from an industrial waste treatment plant. During the landfill's earlier years, wastes including sludge from the industrial waste treatment plant, incinerator residue, gelatine liquors, electroplating sludge, and laboratory glassware were also landfilled. Radioactive wastes including thorium oxide, iodine-129, lead-129, lead-210, carbon-14, tritium and seven other low level radioactive elements were deposited in thirteen permeable wooden cribs and one metal pipe. The elements were buried in either glass or plastic containers. (Cont'd)

Prepared by: Laura LaForge
of NUS Corporation

Date: 6/9/87

336671



POTENTIAL HAZARDOUS WASTE SITE

PRELIMINARY ASSESSMENT

Presently the only radioactive waste being buried is thorium oxide from the glass grindings.

PRIORITY FOR FURTHER ACTION: High___Medium___Low___None X

RECOMMENDATIONS

No further action is recommended for this site. The New York State Department of Environmental Conservation (NYSDEC) Superfund division had Kodak conduct a hydrological study on the inactive portion of the landfill, and install and sample monitoring wells on the active portion of the landfill. Kodak recently submitted a copy of the quarterly sampling results to the U.S. EPA in New York City. The NYSDEC is currently conducting an extensive Phase II investigation on this site.

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)

02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER

Kodak Park Division Eastman Kodak Co.

Weiland Road

03 CITY

04 STATE

05 ZIP CODE

06 COUNTY

07 COUNTY

08 CONG DIST.

Greece

NY

14626

Monroe

055

34

09 COORDINATES

LATITUDE

LONGITUDE

4 30 1 1 5 7" N 0 7 70 4 0 3 7" W

10 DIRECTIONS TO SITE (Starting from nearest public road)

Exit 46 on the New York thruway, Rt. 390 north to Weiland Rd, Exit, go right on Weiland Rd, towards Rochester City. The site is on the south side of Weiland Rd. between Latona Rd. and McLaughlin Blvd.

III. RESPONSIBLE PARTIES

01 OWNER (if known)

02 STREET (Business, mailing, residential)

Kodak Park Division Eastman Kodak Co.

1669 Lake Ave.

03 CITY

04 STATE

05 ZIP CODE

06 TELEPHONE NUMBER

Rochester

NY

14615

(716) 458-1000

07 OPERATOR (if known and different from owner)

08 STREET (Business, mailing, residential)

09 CITY

10 STATE

11 ZIP CODE

12 TELEPHONE NUMBER

13 TYPE OF OWNERSHIP (Check one)

☒ A. PRIVATE☐ B. FEDERAL:

(Agency name)

☐ C. STATE☐ D. COUNTY☐ E. MUNICIPAL☐ F. OTHER:

(Specify)

☐ G. UNKNOWN

14. OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)

☒ A. RCRA 3001

DATE RECEIVED:

/ / 78

☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: / /☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION

BY (Check all that apply)

☒ YES DATE: / / 78☐ A. EPA☐ B. EPA CONTRACTOR☐ C. STATE☐ D. OTHER CONTRACTOR☐ NO☒ E. LOCAL HEALTH OFFICIAL☐ F. OTHER:

(Specify)

CONTRACTOR NAME(S):

02 SITE STATUS (Check one)

☒ A. ACTIVE☐ B. INACTIVE☐ C. UNKNOWN

03 YEARS OF OPERATION

1940's /

Present

☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

The following list of wastes are reported to be at the Weiland Rd. site. Grit from industrial treatment plant, gelatine plant waste, asbestos insulation, sludge from industrial treatment plant, alum sludge from water treatment plant, heavies from refuse incinerator, rolls of paper coated with BaSO₄, electroplating sludge, photographic developer, unrisned chemical glassware, demolition rubble, excavated material from construction projects, fly ash, cinders and incinerator ash, low level radioactive waste, including, thorium oxide, iodine - 210, carbon-14 and tritium.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

There is a potential for contamination of groundwater and surface water at this site. Paddy Creek runs along the west border of the site and receives surface waters run-off from site.

IV. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste information and Part 3 - Description of Hazardous Conditions and Incidents)

☐ A. HIGH
(Inspection required promptly)☐ B. MEDIUM
(Inspection required)☐ C. LOW
(Inspection on time available basis)☒ D. NONE

(No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT

02 OF (Agency/Organization)

03 TELEPHONE NUMBER

Diana Messina

U.S. EPA Region 2, Edison, NJ

(201) 321-6776

04 PERSON RESPONSIBLE FOR ASSESSMENT

05 AGENCY

06 ORGANIZATION

07 TELEPHONE NUMBER

08 DATE

Laura LaForge

U.S. EPA

NUS FIT 2

(201) 225-6160

6 / 9 / 87

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

1. IDENTIFICATION
01 STATE 02 SITE NUMBER
NY D980592497

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply) 02 WASTE QUANTITY AT SITE

03 WASTE CHARACTERISTICS (Check all that apply)

☒ A. SOLID
☒ B. POWDER, FINES
☒ C. SLUDGE

- D. OTHER: _____
(Specify)

(Measures of waste quantities must be independent)

TONS 94650
CUBIC YARDS
NO. OF DRUMS

☒ A. TOXIC
☒ B. CORROSIVE
☒ C. RADIOACTIVE
☒ D. PERSISTENT

☒ E. SOLUBLE
☒ F. INFECTIOUS
☒ G. FLAMMABLE
☒ H. IGNITABLE

- I. HIGHLY VOLATILE
- J. EXPLOSIVE
- K. REACTIVE
- L. INCOMPATIBLE
- M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNITY OF MEASURE	03 COMMENTS
SLU	SLUDGE	91600	tons	Grit from industrial treatment plant, gelatine plant waste, sludge from industrial treatment plant, alum sludge, electroplating waste sludge, photographic developer liquor waste.
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS	600	tons	
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
IOC	BaSO ₄	7440-39-3	Rolls of paper coated with BaSO ₄		
IOC	Thorium Oxide	999	These are all radioactive and are stored in glass and plastic inside wooden cribs.		
IOC	Iodine-129	7553-56-2			
MES	Lead-210	7439-92-1			
IOC	Tritium	999			
	Asbestos	1332214			

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (See specific references. e.g., state files, sample analysis, reports)

NYSDEC Avon Office Background File.

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

1. IDENTIFICATION
01 STATE 02 SITE NUMBER
NY D980592497

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 X A. GROUNDWATER CONTAMINATION 02 OBSERVED (DATE:) X POTENTIAL _ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: Unknown 04 NARRATIVE DESCRIPTION

Groundwater samples were taken in 1978 by the Monroe County Department of Health from a private well at 635 Weiland Rd and found to contain a low level of Methylene Chloride, and acid magenta. This home is now using public waters but a potential exists for neighboring homes to be using private wells.

01 X B. SURFACE WATER CONTAMINATION 02 OBSERVED (DATE:) X POTENTIAL _ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 204,528 04 NARRATIVE DESCRIPTION

Surface water samples taken from a surface ditch in the landfill by the Monroe County Department of health were found to contain acid magenta. Also leachate from this site was pumped into Paddy Creek which runs along the western side of the landfill. Paddy Creek flows into a pond which is accessible for recreational activities.

01 X C. CONTAMINATION OF AIR 02 OBSERVED (DATE:) X POTENTIAL _ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 282,405 04 NARRATIVE DESCRIPTION

The site has a history of odor problems from the leachate collection system. A chlorination station was constructed to alleviate this problem. It was in operation for many years until Kodak changed their discharge locations from Paddy Creek to the King's Landing Water Treatment Plant.

01 D. FIRE/EXPLOSIVE CONDITIONS 02 OBSERVED (DATE:) X POTENTIAL _ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 110,061 04 NARRATIVE DESCRIPTION

There is no potential for fire or explosive conditions at this site. The material disposed of on this site is mainly non-combustible.

01 X E. DIRECT CONTACT 02 OBSERVED (DATE:) X POTENTIAL _ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 24,487 04 NARRATIVE DESCRIPTION

There is a potential for direct contact. The landfill is an active site with exposed surface ponds. In addition, two-thirds of the site have been covered with a parking lot, a roadway and recreational facilities.

01 X F. CONTAMINATION OF SOIL 02 OBSERVED (DATE:) X POTENTIAL _ ALLEGED
03 AREA POTENTIALLY AFFECTED: 45 (ACRES) 04 NARRATIVE DESCRIPTION

A potential exists for soil contamination from materials disposed of onsite. The landfill is unlined and the materials were directly disposed of into the soil.

01 X G. DRINKING WATER CONTAMINATION 02 OBSERVED (DATE:) X POTENTIAL _ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: Unknown 04 NARRATIVE DESCRIPTION

Samples from a private well located on the northwest corner of the landfill contained low levels of drinking water contamination. This home is no longer using the well, but a potential exists for neighboring homes to be using private wells.

01 X H. WORKER EXPOSURE/INJURY 02 OBSERVED (DATE:) X POTENTIAL _ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: Unknown 04 NARRATIVE DESCRIPTION

There is a potential for worker exposure. The landfill is still being used for disposal of chemical and radioactive wastes.

01 X I. POPULATION EXPOSURE/INJURY 02 OBSERVED (DATE:) X POTENTIAL _ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 204,528 04 NARRATIVE DESCRIPTION

There is a potential for population exposure from the exposed surface ponds and the leachate collection system. There is also a potential for exposure from possibly contaminated groundwater.

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

1. IDENTIFICATION
01 STATE 02 SITE NUMBER
NY D980592497

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ J. DAMAGE TO FLORA
04 NARRATIVE DESCRIPTION

02 _ OBSERVED (DATE: _____) ☒ POTENTIAL _ ALLEGED

There is very little potential for damage to the flora, most of the vegetation has been removed from the site.

01 ☒ K. DAMAGE TO FAUNA

04 NARRATIVE DESCRIPTION (Include name(s) of species)

02 _ OBSERVED (DATE: _____) ☒ POTENTIAL _ ALLEGED

The leachate from the landfill was pumped into Paddy Creek. A potential exists for damage of both aquatic and terrestrial fauna.

01 ☒ L. CONTAMINATION OF FOOD CHAIN

04 NARRATIVE DESCRIPTION

02 _ OBSERVED (DATE: _____) ☒ POTENTIAL _ ALLEGED

There is a potential for contamination of both aquatic and terrestrial food chains from leachate directly pumped into Paddy Creek. The leachate is chlorinated before it is discharged.

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES

(Spills/runoff/standing liquids/leaking drums)

03 POPULATION POTENTIALLY AFFECTED: 24,487

02 _ OBSERVED (DATE: _____) ☒ POTENTIAL _ ALLEGED

04 NARRATIVE DESCRIPTION

Groundwater sample results indicate contaminants have moved off-site indicating unstable containment of wastes.

01 ☒ N. DAMAGE TO OFFSITE PROPERTY

04 NARRATIVE DESCRIPTION

02 _ OBSERVED (DATE: _____) ☒ POTENTIAL _ ALLEGED

There is a potential for offsite property damage from the leachate directly pumped into Paddy Creek, which flows through many offsite properties.

01 ☒ O. CONTAMINATION OF SEWERS, STORM DRAINS, MWTs

04 NARRATIVE DESCRIPTION

02 _ OBSERVED (DATE: _____) ☒ POTENTIAL _ ALLEGED

The leachate from this site is collected and discharged to the King's Landing Water Purification Plant.

01 ☒ P. ILLEGAL/UNAUTHORIZED DUMPING

04 NARRATIVE DESCRIPTION

02 _ OBSERVED (DATE: _____) ☒ POTENTIAL _ ALLEGED

There is a slight potential for unauthorized dumping at this site. It is unknown if the site is completely fenced in.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

The landfill contains industrial incinerator waste from Kodak Park.

III. TOTAL POPULATION POTENTIALLY AFFECTED: Unknown

IV. COMMENTS

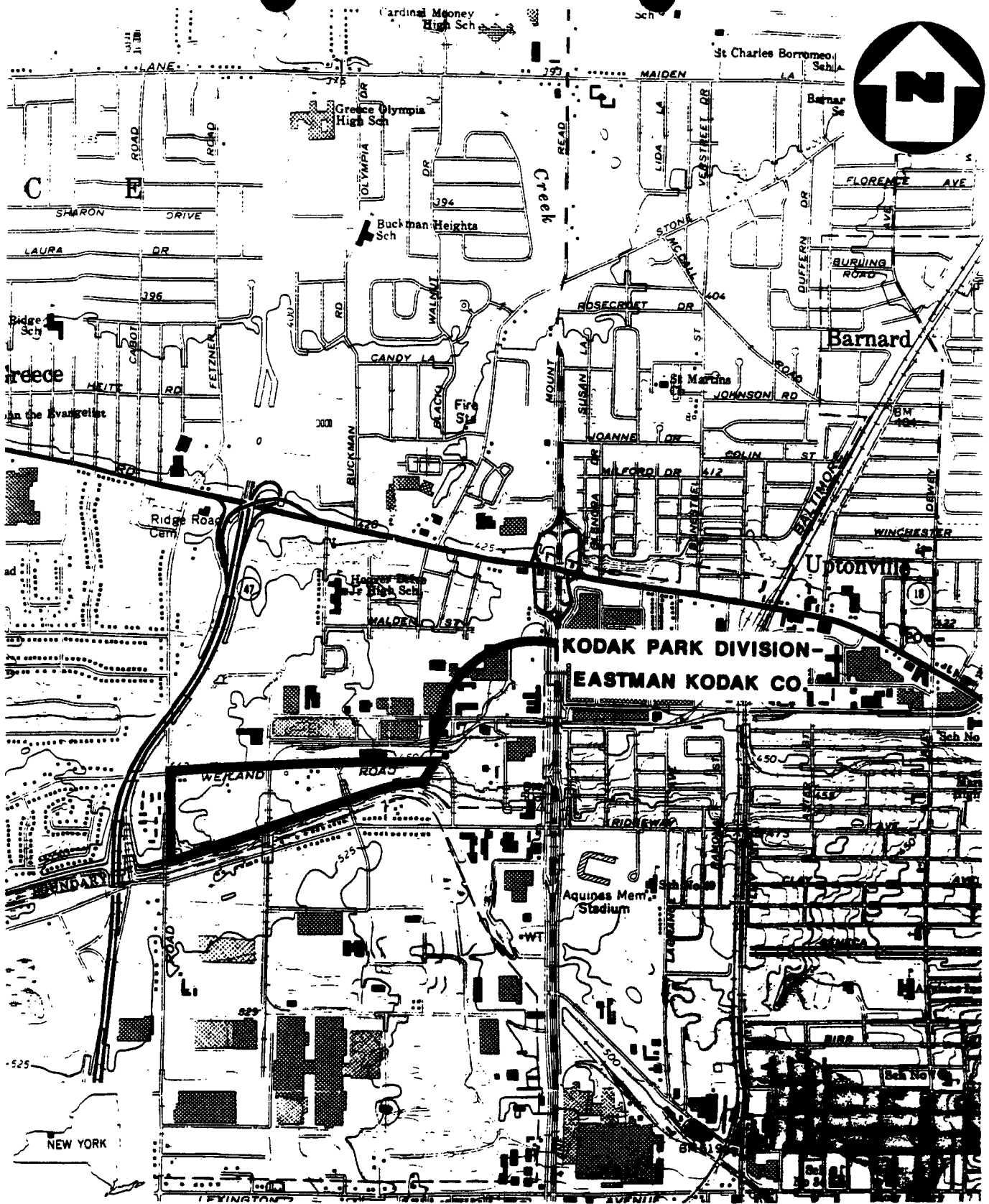
The results of the recent sampling were mailed to Mr. Andy Belina, U.S. EPA, New York City. Photographs taken during the off-site reconnaissance were of the wrong site.

V. SOURCES OF INFORMATION (Cite specific references. e.g., state files, sample analysis, reports)

NYSDEC Avon New York Background File.
Telecon between Vince Dick of NYSDEC, Avon Office and Laura LaForge NUS.

APPENDIX A

MAPS



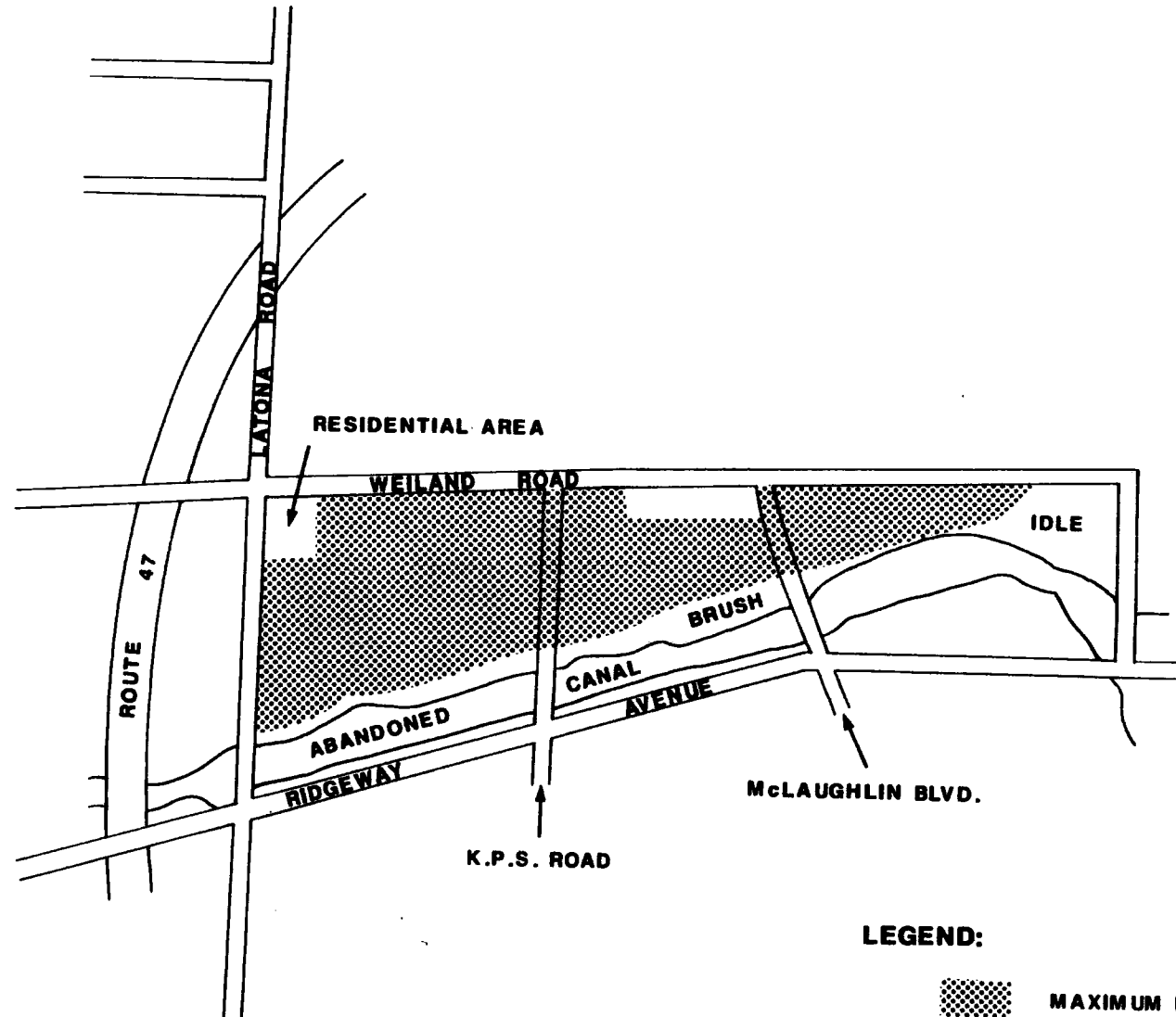
(QUAD) ROCHESTER, WEST, N.Y.

SITE LOCATION MAP
KODAK PARK DIVISION-
EASTMAN KODAK CO., GREECE, N.Y.

SCALE: 1"=2000'

FIGURE 1





SITE MAP
KODAK PARK DIVISION - EASTMAN KODAK CO., GREECE, N.Y.
(NOT TO SCALE)

APPENDIX B

BACKGROUND INFORMATION

(POOR FILE COPY, SOME PAGES MAY BE HARD TO READ.)

MONOGRAPH #2
THE WEILAND ROAD INDUSTRIAL LANDFILL
GREECE LANDFILL SITE NO. 7

June, 1980

This report was prepared by the Monroe County Landfill Review Committee as part of a county-state cooperative effort to evaluate abandoned and existing landfill sites in Monroe County.

Table of Contents

Letter of Transmittal	
Acknowledgments.....	ii
Table of Contents.....	iii
List of Figures.....	iv
List of Tables.....	iv
The Weiland Road Industrial Landfill.....	1
Site Location.....	1
Landfill Practices.....	1
Site Contents.....	2
Site Geology.....	3
Water Sample Tests.....	4
Conclusions.....	5
Recommendations.....	6
Action.....	6
Tables 1, 2.....	7, 8
Figures 1-7.....	9-15
References Cited.....	16
Appendix A. Aerial Photograph Interpretations.....	17
B. General Geology Report, Dr. Richard A. Young, November 8, 1979.....	27
C. Review and Reevaluation of Test Boring.....	35
Data on Lee-Latona Road Improvement	
Relevant to Kodak Weiland Road Landfill,	
Dr. Richard A. Young, January 25, 1980	
D. Letter to Frank Clark, NYSDEC, from.....	39
Trevor W. Ewell, Eastman Kodak, January	
14, 1980	
E. Memo from Richard S. Burton to Landfill.....	49
Review Committee, February 6, 1980	

List of Figures

- Figure 1. General location map
2. Maximum Boundary map
 3. Boring location map
 4. Original site geology
 5. Location of private wells
 6. Water sample locations
 7. Preliminary Plot Plan - Eastman Kodak

List of Tables

- Table 1. Material Disposed at Kodak Landfill
- Table 2. Half Lives of Radioactive Isotopes Disposed at Weiland Road Landfill

The Greece Landfill Site No. 7 is an existing industrial sanitary landfill operated by the Eastman Kodak Company on Weiland Road in the Town of Greece (Figure 1). Kodak, the largest chemical manufacturer in the Rochester area, has operated a landfill at the Weiland Road site since the late 1940's. Although the company presently incinerates its organic wastes, some organic compounds have been landfilled at the site. Concern over possible leachate contamination of both ground and surface waters to and to the north and west of the site prompted the present investigation.

Site Location

The existing industrial landfill is bounded by Weiland Road on the north, the abandoned Erie Canal bed on the south, Latona Road on the west, and the Kodak service road on the east. It encompasses approximately 20 acres. However, the total area used for dumping since the landfill operation began in the late 1940's extends eastward from the current site to a point about 500' west of the curve in Weiland Road. Figure 2 shows the maximum boundaries of the known dumping area as identified on aerial photographs dating back to 1930. The total area is approximately 45 acres. Property records indicate that the dumping activities have all taken place on property owned by the Eastman Kodak Company. (1)

Landfill Practices

Aerial photographs taken in 1930 show the general land use as orchards and pasture, with a stream traversing a large wetland area on the southern portion of the site near the abandoned canal. Dumping was first evident at the eastern end of the site on the 1951 photographs. By 1958 an extensive soil moving operation had begun in the wetland area in the southwest corner; by 1961 this operation had expanded eastward over two-thirds of the site. The aerial photos show that disposal activity moved steadily westward across the site during the 1960's, eventually filling in the areas where soil movement had occurred. By 1976 the dumping activity on the eastern two-thirds of the site had been covered and the area developed into a parking lot, a roadway, and recreation facilities. Landfilling continued west of the Kodak service road. The aerial photo interpretation sheets for nine years of available photography are shown in Appendix A.

Beginning in 1954 Kodak installed a shallow french drain on the southeastern portion of the site to collect excess surface water. This drain was four to six feet below existing grade prior to filling. The drain was extended westward as the landfill area expanded. A chlorination station was initially installed near the center of the site to alleviate an odor problem caused by leachate collected by the drain system. The chlorination station was moved near Latona Road in the late 1960's and until recently chlorinated part of the surface runoff prior to its discharge into Paddy Hill Creek (Figure 3). Operation of the chlorination station was terminated in 1979 when Kodak initiated plans to collect and discharge the leachate collected by the drains to the King's Landing Water Purification Plant. (2)

Site Contents

The present landfill is reportedly used for inorganic material only. Ninety percent of the waste currently being landfilled is demolition rubble, excavated material from construction projects, fly ash, cinders, and incinerator ash. The remaining ten percent is non-combustible rubbish, glass, heavies from Building 145 refuse incinerator and grit from the industrial waste treatment plant. (3) (4) Table 1, provided by Eastman Kodak, summarizes the materials disposed at the Weiland Road site since the early 1950's. Along with those wastes previously mentioned, the site contains organic and inorganic wastes, including sludge from the industrial waste treatment plant, incinerator residue, gelatine plant wastes, and alum sludge from the water purification plant. Other wastes, including paper, developer liquors, electroplating sludge, and laboratory glassware, were also landfilled. Conversations with Kodak indicate that it is likely that small amounts of a variety of chemicals were probably codisposed with the unwashed laboratory glassware.

For a number of years Eastman Kodak has produced glass grindings which contain natural radioactive thorium compounds. Beginning in 1958 the disposal of low level radioactive materials came under regulation by the Atomic Energy Commission (Title 10, Chapter 20, part 20.304). To meet AEC regulations Kodak constructed permeable wooden cribs and one metal pipe for the disposal of radioactive wastes. The natural thorium as thorium oxide was buried in the cribs as slurries and solids; in solid form it is not soluble in water. (5)

An Eastman Kodak engineer's report prepared in 1968 indicates that, in addition to the thorium oxide, eleven other low level radioactive elements from scientific experiments were deposited in thirteen of the cribs and the metal pipe prior to May 5, 1967. (5) These elements were buried in either glass or plastic containers. The isotopes and their half lives are shown in Table

2. The half lives indicate that only four of the isotopes are still active. While Iodine-129 and Lead-210 have long half lives, the amounts deposited were so low as to be insignificant.

The only compounds that might be detected in ground water would be carbon-14 and tritium. Of these, tritium would be the more likely to exchange with the hydrogen in the water molecules. The presence of either would depend on whether they were deposited in solid or liquid form and the integrity of the glass and polyethylene containers. The engineer's report indicates that groundwater levels were above the base of the cribs in 1968, and it is expected that these levels are higher today because of the additional fill that has been placed on the site.

Additional cribs have been constructed since 1968 which contain thorium only. The only radioactive waste presently being buried is thorium oxide from the grinding of lenses.

Site Geology

Two geologic reports were prepared for the Weiland Road Landfill (Appendices B and C). The second was written after additional boring log information was received for the improvement of Lee-Latona Road on the western end of the site. This data permitted a more accurate and consistent analysis of the subsurface geology of the landfill site than had been previously possible. All borings referred to below are shown in Figure 3.

Prior to acquisition and analysis of the Lee-Latona Road borings, the subsurface geology of the site was projected to include beach sand and gravel deposited by pre-historic Lake Dawson as illustrated in Figure 4. The borings from the Lee-Latona project, when combined with additional borings on the site, confirmed a bedrock surface elevation of between 420 and 424 feet (Appendix C) and a three to seven-foot thick organic and marl sequence at base 430 to 433 feet along the southwestern portion of the site. The borings describe the sediments below the marl mainly as loose, wet to saturated sands with smaller amounts of silt and/or gravel (Erdman and Anthony contract to Rochester Drilling, 1976 - Borings B11, B12 - Figure 3). Low blow counts for some borings also confirm that significant amounts of loose material characterize the sediments. From the descriptions of the samples and their variations it can be seen that the sediments are sorted and stratified, supportive of beach, sand bar or lagoonal origins, followed by swamp development (marl and peat). Since Borings B13 to B22 along Latona Road (not all shown on Figure 3) do not go to bedrock, the northern extent of the sandy aquifer identified in B11 and B12 cannot be determined from the existing data. Boring logs along Weiland Road (Rochester Drilling, 1974), report high blow counts which suggest the presence of glacial till on the north side of the site.

The sandy saturated material at depth along Latona Road, combined with the more permeable glacial till along Weiland Road, suggests the possibility of groundwater migration west or northwest off the site near Latona Road. This movement would occur in the subsurface throughout a ten foot zone above the bedrock and beneath the fill. This zone is currently saturated, demonstrating that water continues to enter this area. Groundwater movement to the south is unlikely because of relatively high bedrock contours, low bedrock permeability, and the relatively steep groundwater surface gradient (Appendix B).

Water Sample Tests

There are several homes with wells in the area north of the landfill. Figure 5 shows the location of these properties. At the present time only the house at 250 Latona Road (1/2 mile to the north) is not connected to public water. In 1978 the Monroe County Health Department and Kodak collected water samples from a private well at 635 Weiland Road and a surface ditch north of Weiland Road (Figure 6). Tests showed that the sample from the well contained a low level of methylene chloride; both samples contained a chromophoric material known as acid magenta. (6) From this information the Monroe County Health Department concluded that chemicals were moving away from the site. Although no health hazard was evident, the Health Department recommended that use of the well be terminated and the home be hooked up to the public water supply available on Weiland Road. (7) This action was taken in 1979.

Eastman Kodak provided information on three separate water sampling programs conducted by the company during 1978 and 1979 (Appendix D). Figure 6 shows the location of each test site. The testing program included

- (1) landfill leachate and KPM storm sewer drainage at 13 sites on September 19, 1978, September 28, 1978, October 6, 1978 and November 7, 1978.
- (2) runoff waters at point A 1 along the Kodak Service road and point A 2 along Weiland Road.
- (3) samples from wells L-1 through L-7 on June 21, 1978 and August 23, 1979.

Monroe County Health Department analysis of the data resulted in the following conclusions (Appendix E):

- (1) Based on the 13 surface water samples taken in 1978 showing leachate concentrations greatest at locations No. 6 and 7 along the northwest side of the site, surface water is moving north to northwesterly off the site.
- (2) For sites A 1 and A 2, the samples show minute traces of a few organic compounds and low level of metals. A 2 had zinc concentrations approaching one-half the surface water standard.
- (3) For subsurface samples obtained from 1-1 through 1-7, there is a considerable fluctuation in concentrations for several parameters, with all locations having at least one parameter exceeding the acceptable level for drinking water. Locations 1-3 and 1-4 near the center of the site have the greatest number of unacceptable values.

Conclusions

Water sample tests conducted at the Weiland Road landfill indicate that a long-term monitoring program is needed. Geologic and water sampling data suggest that leachate could be moving in a northwesterly direction off the Weiland Road landfill on the surface and at depth. Organic compounds have been detected in surface samples, with the heaviest concentrations in the northwestern portion of the landfill site. The geologic data raises the possibility that leachate could be moving at depth off the western edge of the site beneath the existing leachate collection system, contaminating soil and bedrock aquifers.

In addition the elevation of the groundwater surface is rising as a result of additional fill. This will affect the general hydrology of the site, including flow rate, direction of groundwater movement, and the nature of the leachate.

Until existing hydrologic conditions can be determined by further borings and water samples, it is not known whether Kodak's collection system and connection to the King's Landing Water Purification Plant will effectively intercept the leachate. Subsurface data on soils and water at the far eastern end of the site (now developed with parking lots and ballfields) is lacking.

Recommendations

1. Eastman Kodak should install long-term monitoring wells to the depth of the bedrock surface on the east, west, and north sides of the entire landfill site. These wells are needed because the hydrology of the site is continually changing as a result of additional fill.
2. Borings from Erdman and Anthony identify a sandy aquifer along Latona Road; the wells in this area should be located to delineate, penetrate, and sample the sandy aquifer.
3. Water samples from all wells should be analyzed for leachate contamination through a testing program developed jointly by Kodak, NYSDEC, and the Monroe County Health Department.
4. If significant quantities of leachate are found in the water samples, modifications to the existing and proposed leachate collection system will be necessary.

Action

In June and July, 1980 Eastman Kodak installed additional monitoring wells to the depth of bedrock on and around the perimeter of the Weiland Road site as recommended above. (Figure 7) The testing program is designed to examine soil samples down to and including bedrock. Emphasis will be placed upon determining the possible existence of multiple aquifers and the groundwater flow direction and velocity in each.

The water sampling protocol will be developed jointly by the Monroe County Health Department, the Department of Environmental Conservation, and Kodak personnel. It is anticipated that samples will be taken by both Kodak and the Monroe County Health Department.

-7-

<u>Material</u>	<u>Years</u>	<u>Tonnage (dry basis)</u>
Grit from Industrial Treatment Plant	1957 - present	40000
Gelatine Plant wastes (bone chips and grit)	1950 - 1977	20000
Sludge from Industrial Treatment Plant	1957 - 1961	18000
Alum Sludge from Water Purification Plant	1950 - 1977	13000
Heavies from Building 145 refuse incinerator (wood, plastic, metal)	1925 - present	7000
Rolls of paper - some BaSO ₄ coated from November 1951 fire (single incident)	Early 1950's	3000
Electroplating waste sludge	1960 - 1971	600
Photographic Developer liquor waste (single incident)	Early 1950's	50
Unrinsed chemical glassware and empty bottles from laboratories	1950 - 1959	Undeterminable - small quantities
	<u>Total Tonnage</u>	<u>101,650 *</u>

JRHoff:jmc
1-10-80

*The approximately 102,000 tons represents about 3.4% of the total tonnage deposited to date at the Welland Road Landfill. The remaining 96.6% is demolition rubble, excavated material from construction projects, fly ash, cinders, and incinerator ash.

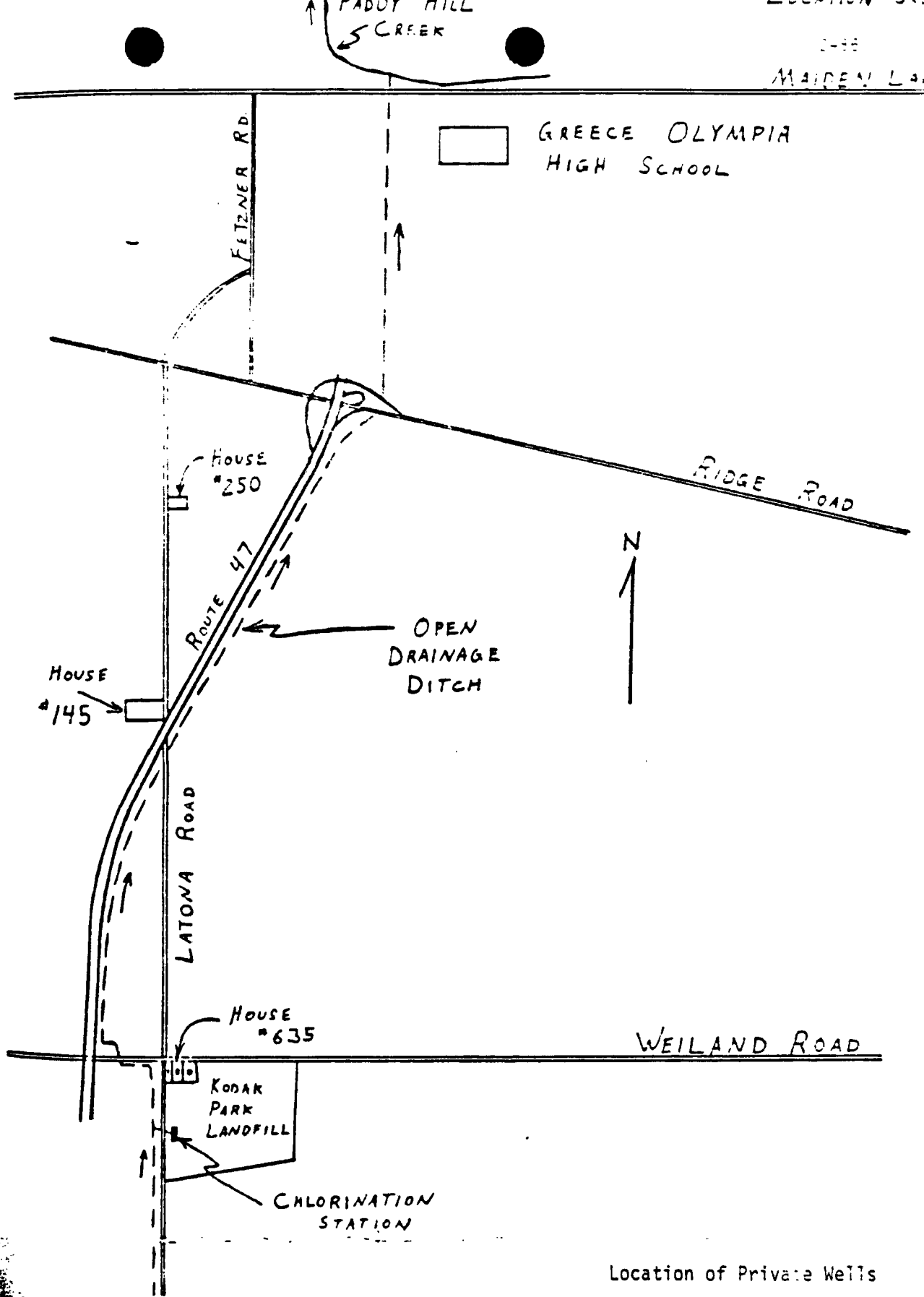


Figure 5

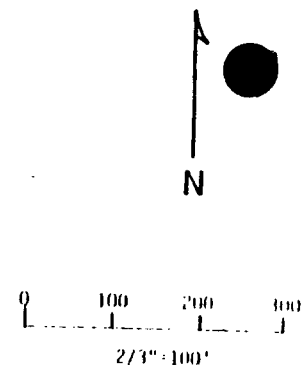
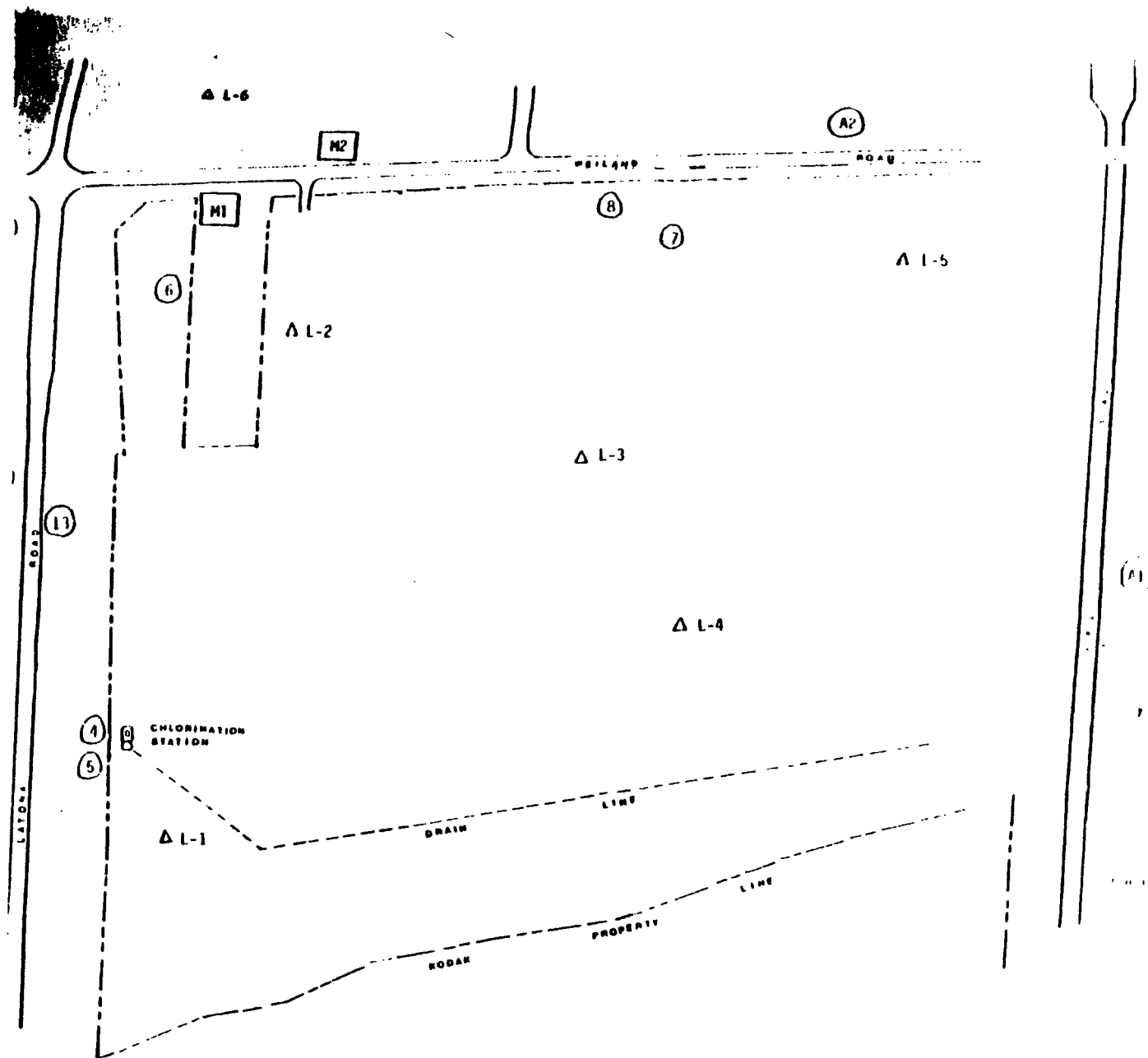
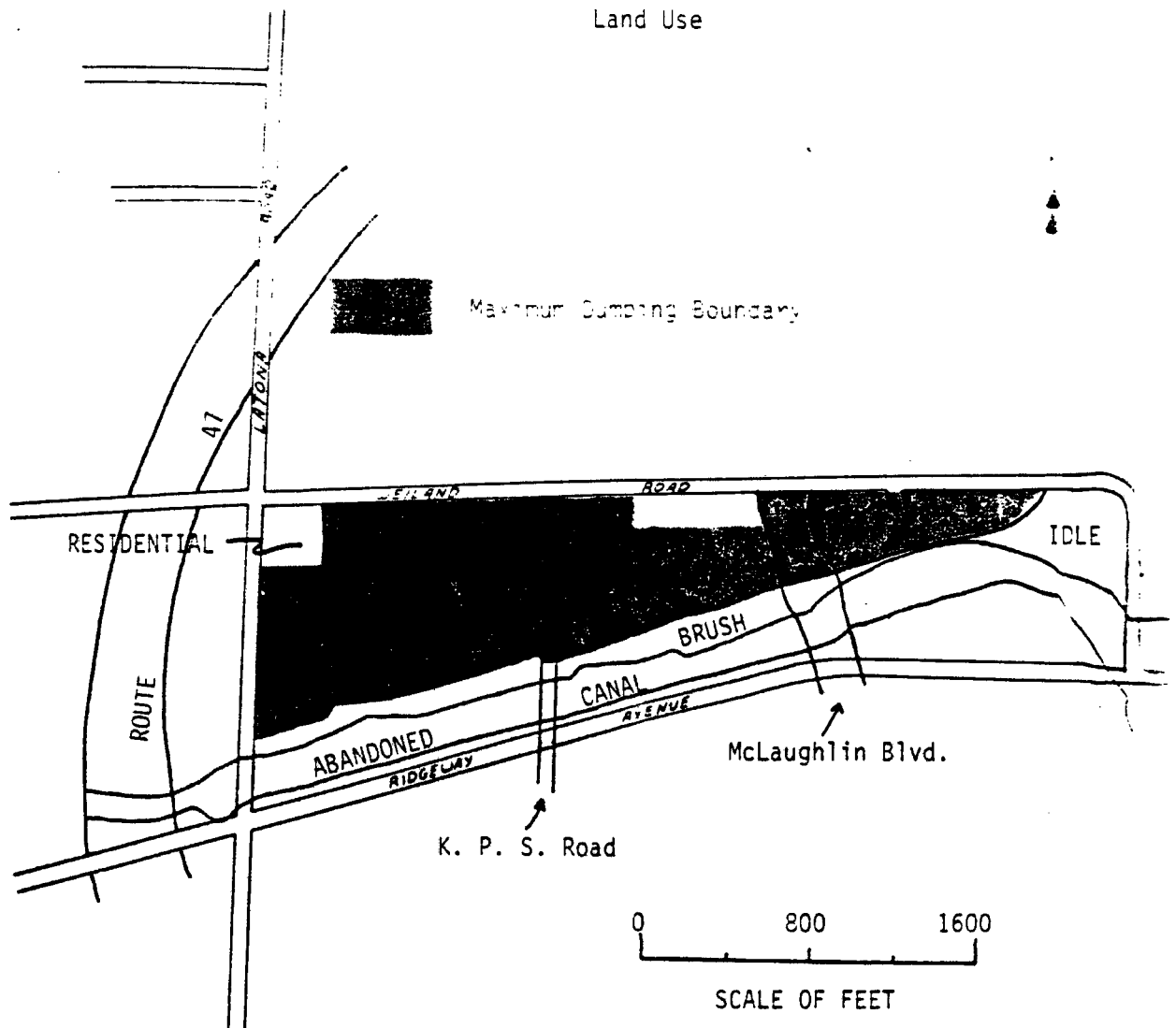


FIGURE 6

Locations 1-17 - surface samples, 9/11/78
 A1, A2 - surface samples, 4/10/79
 11-17 - groundwater samples, 4/11/79
 8/23/79
 M1, M2 - Monroe County Health
 Department Lab samples

Water Sampling Locations

Maximum Boundary for Dumping Activities
from 1940's to Present with Current
Land Use



GREECE LANDFILL SITE NO. 7

Figure 2

-11-

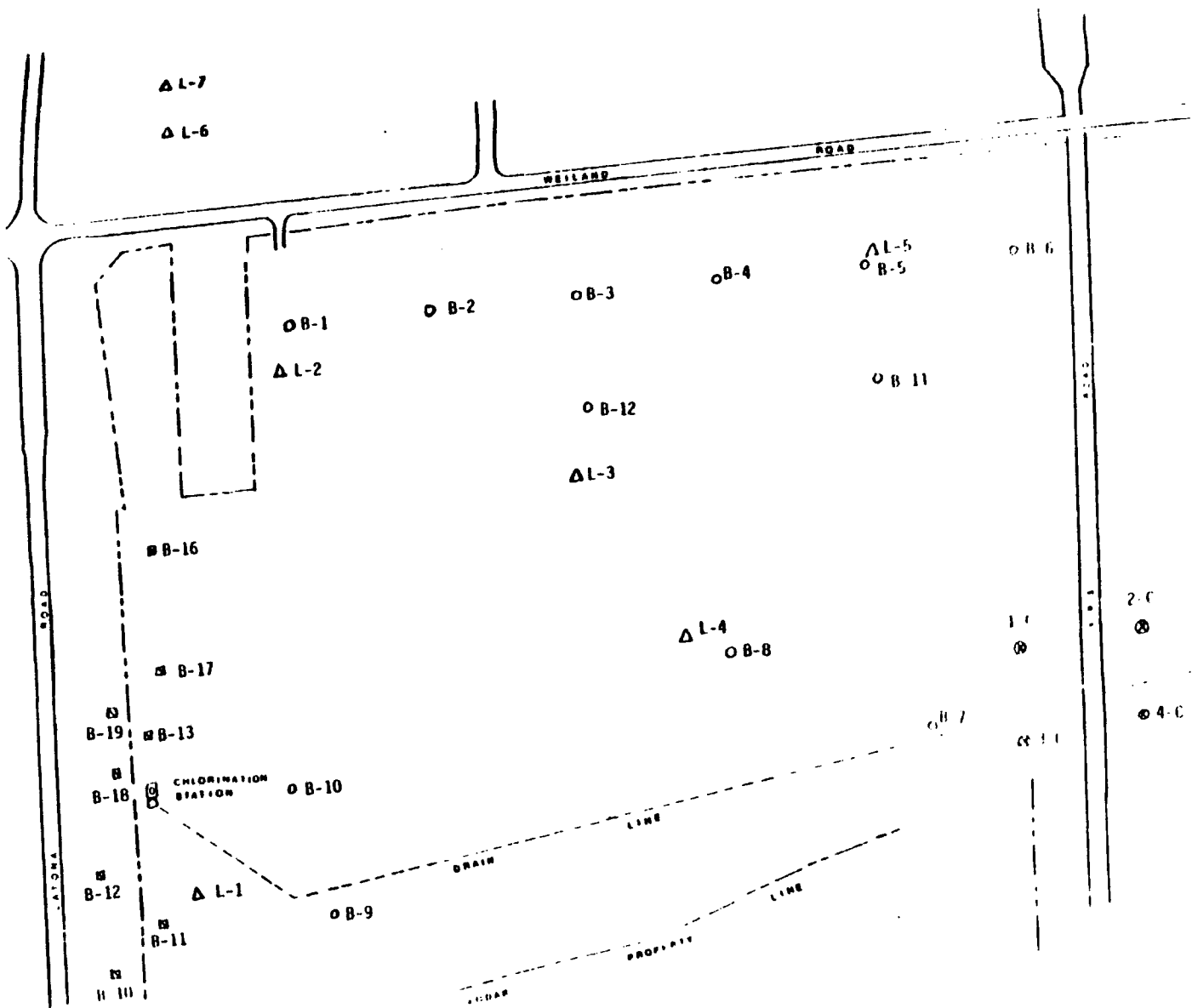


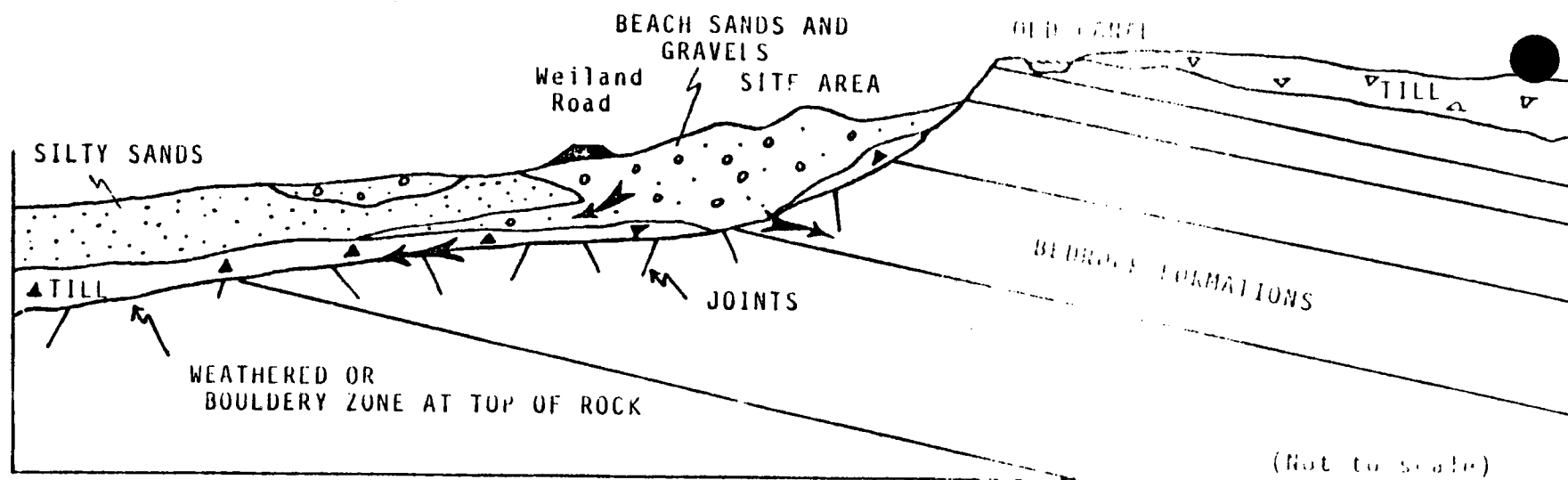
Figure 3

- Code for Borings
- Rochester Drilling (12 borings) 1974
 - Δ Dames and Moore (11-17) 1978
 - N Erdman and Anthony contract to Rochester Drilling 1976
 - ⊗ Fact Technical Service (locations are approximate)

WEILAND ROAD SITE
 DIAGRAMMATIC GEOLOGIC CROSS SECTION
 ILLUSTRATING THE POSSIBLE RELATIONS BETWEEN GROUNDWATER
 AND SURFICIAL DEPOSITS
 PRIOR TO SITE DEVELOPMENT

(Heavy arrows denote subsurface groundwater migration)

Figure 4



GEOLOGIC REPORT

Landfill Site: Greece #7 (Weiland Road)

Introduction:

This site straddles Weiland Road and is bounded by Latona Road (west) and Ridgeway Avenue (south). It extends approximately 3,500 feet east of Latona Road and includes three separate areas, two of which began as extraction operations. It is located on the glacial Lake Dawson shoreline immediately north of the old (abandoned) Erie Canal route. The elevation of the site ranges approximately from 450 to 500 feet, north to south.

Bedrock:

The rock formations underlying the site are the same ones visible in the Rochester gorge at the Lower Falls. The old Erie Canal south of the site is located immediately north of the contact between the Rochester Shale and the Irondequoit Limestone. Between the canal and Weiland Road (1000') the Irondequoit Limestone, the Williamson Shale, the Sodus Shale, the Reynales Limestone, the Maplewood Shale, the Thorold Sandstone and the Grimsby Formation are present in descending order, the Grimsby being the lowest and oldest unit extending northward almost to Holmes Road.

Surficial Geology:

This site is located in the zone of major beach ridges on the Dawson shoreline. The types of materials to be expected in this zone are localized or restricted elongate aquifers in gravel beaches, old channels, offshore sand bars, sand dunes, and/or near shore fine sands and silts. The sands and gravels have been well sorted by wave action and longshore currents, which accounts for the extraction operations along these shorelines. Sorting of finer material by the wind followed the lowering of glacial lake levels. These materials have high permeabilities and complex depositional shapes because of the instability of proglacial lake levels and the complexities of shoreline environments (currents, streams, dunes, etc.).

Wave erosion in the glacial lakes was concentrated at different levels creating bedrock cliffs and truncating older till, beach, and outwash deposits. At this location the Dawson Beach terminated against a bedrock cliff structurally controlled by the resistant nature of the sandstones seen at the Lower Falls and the dolomitic portion of the Rochester Shale.

The beach ridges produce a "ridge and swale" topography that can enhance recharge of surface runoff and influence the courses of small tributary streams (Paddy Hill Creek). Construction of buildings and Route 47 has obscured the natural topographic features shown on the 1935 or older topographic maps.

It should be noted that the location of specific sand and gravel extraction operations does not correlate well with the detailed soil maps published by the United States Department of Agriculture. This is due to the fact that soil maps generally describe only the upper two to three feet of the overburden. Also, extraction operations are limited by landownership, access, and prior established usages.

The anticipated nature of surficial geologic materials is shown on the accompanying diagrammatic cross-section used to illustrate the potential movement of ground water.

A line of borings crosses the same shoreline a mile to the west along the route of the North-South interceptor sewer (west side of Long Pond Road). These borings show the surface materials to consist of 12 to 24 feet (average) of reddish-brown silts and clays with some sand. Water was generally encountered within one to three feet of the surface. Another mile to the west on the same sewer project the materials encountered were 15 to 20 feet of coarse to fine sand, silt, gravel and boulders with water in the borings recorded at depths no greater than 5 feet. The sands and gravels on this shoreline are generally thinner and less extensive than those on the Iroquois shoreline along Ridge Road, 4,000 feet north of Weiland Road.

Other borings on the Weiland Road site provided by Kodak from engineering studies indicate that glacial till probably exists under portions of the site south of Weiland Road. Borings near the intersection of Latona Road and the old Erie Canal (southwest corner of site) show very loose material (fill?) close to the rock surface. This is supported by the analysis of photographs showing excavations extending close to the rock surface in that area.

Ground Water:

The type of deposits listed above may lead to a complex ground water flow regime. Water can readily soak into the permeable sands and gravels and will generally move in one of the following ways: (a) Water can saturate the sands and move in an east-west direction until topographic breaks or depositional irregularities allow the water to drain down the regional ground water slope (north); (b) Where sands rest on bedrock water may enter suitable rock or follow jointed or weathered zones out beneath the

surrounding impermeable glacial deposits (northward); (c) where high water tables or complete saturation occur the near surface ground water will flow northward through the thinner surficial sands and silts that are scattered throughout the area to the north. Any local streams or gullies crossing the region should effectively drain the ground water northward, preventing a significant build up of hydrostatic pressure or a groundwater mound.

The significance of the groundwater infiltration through the coarse beach sands and gravels lies in the glacial stratigraphy to the north of Ridge Road. Where better drilling data exist between North Avenue and Long Pond Road, as well as east of the Genesee River, a complex pattern of groundwater movement can be documented (See example from Culver-Ridge Shopping Center Site, attached). Artesian water is sometimes present in sand, silt, gravel, or weathered rock between the bedrock surface and less permeable sediments. A second isolated or perched water table often occurs within or on top of glacial till where it is weathered or overlain by more permeable sediments.

The porous beach deposits feed ground water directly into these aquifers. The capacity of the artesian horizon is limited, so the surface sediments are kept relatively well recharged from surface infiltration and near-surface downslope water movement.

The natural topography of the typical beach environment (ridges and swales) enhances the recharge by retarding surface runoff. The Weiland Road site as seen on the 1935, 1:24,000 topographic quadrangle map is located in a region of such ridge and swale topography. More recent maps reflect significant changes introduced by construction activity.

The beach ridges near the Weiland Road site were breached (eroded) by the headward erosion of Paddy Hill Creek, which drains to the north. Its tributaries are obviously located in east-west trending swales (low troughs) adjacent to the former beach ridges. This erosional breaching has influenced the drainage of the near-surface ground water as shown on the bedrock and groundwater contour maps (See reference at end of report). Near-surface ground water should move relatively rapidly out through the stream that once breached the Iroquois Beach at Ridge Road just west of Stone Road (now diverted beneath Ridge Road by a culver?).

Construction of buildings and Route 47 have obscured these relationships on the newer maps. However, the general topography, drainage, bedrock contours, and water table data suggest that ground water from the site should still move northward along the preexisting course of Paddy Hill Creek on the east side of Rt. 47.

If significant near-surface groundwater pollution exists at or near this site it should be readily detected in surface or ground water along the course of Paddy Hill Creek in one or more places. Suggested surface sampling sites are: (1) the drainage structure beneath Ridge Road; (2) the conspicuous depression north of Hoover Drive Jr. High School; or (3) further downstream from Ridge Road where Paddy Hill Creek has been indicated as maintaining permanent flow.

Because of the natural erosion and breaching of the old beaches in this region by Paddy Hill Creek, it is unlikely that hydrologic conditions would develop that would allow significant east-west flow of ground water beneath Rt. 47 or to the east of the site. However, because Ridge Road is itself constructed on beach deposits, it should not constitute a barrier to northward groundwater flow. Water is likely to move easily through any coarse gravel deposits that may be undetected in the subsurface.

The sequential air photo analysis by the Cornell Resource Information Laboratory documents the existence of sand and gravel extraction that continued as the area developed. This indicates there is a reasonably high probability of permeable sediments elsewhere throughout the area. This is documented by boring data between North Avenue and Long Pond Road in an analogous geologic setting. The boring data can be extrapolated to the Weiland Road site with confidence because of the excellent geologic control and published descriptions of the location and composition of the major glacial shorelines in this region.

Water levels in borings south of Weiland Road on the landfill site (Dames and Moore data, 1978) and a report supplied by Kodak show water levels between three and seventeen feet (except in one boring) throughout a major portion of the site. Because some of the data was collected in 1974, prior to recent filling operations, it is not possible to accurately reconstruct the trend or shape of the existing water table, especially at the southwest end of the site. This is also the area where loose sediments were encountered in borings near the rock interface.

Stratigraphic units exposed in the cliff north of the old Erie Canal could allow some water to enter the bedrock near the Dawson Shoreline and travel southward, following the regional dip of the rocks (approximately 55 ft./mile). However, most of the rocks exposed here have relatively low permeabilities and lie beneath the solution zones in the Lockport Dolomite. Higher stratigraphic horizons in the Lockport Dolomite are of greater significance for groundwater movement in areas to the south of the beach deposits, but unrelated to this site.

Pertinent Well Data:

Leggette et al., 1935

North-South Sewer Interceptor contract #15, Appendix A (borings B-15-27 to B-15-53)

Miscellaneous borings supplied by Kodak done by Dames and Moore, 1978;

Rochester Drilling, 1974; and Fact Geotechnical Service, Inc., 1965.

Cross-section through Culver-Ridge Shopping Center on Iroquois Shoreline (for comparison only). Teeter-Dobbins, 1977.

Summary and Conclusions:

Any leachate plume in the ground water at this site is most likely to be generally along the former channel of Paddy Hill Creek. There is a potential for rapid migration of leachate in the vicinity with a possibility that ground water may rise toward the surface on encountering less permeable glacial till to the north. The Culver-Ridge site cross-section attached indicates possible conditions to be found in such areas. (See also diagrammatic sketch of Weiland Road site.) The soft fill material documented by borings in the southwest corner of the site raise the possibility that deep excavation and back filling may have opened new avenues for potential leachate migration to the west and north in the vicinity of Latona Road and on Route 47. In this portion of the site, evidence for glacial till is present at depth, and the only groundwater data supplied predates the latest significant filling activity. More information on groundwater conditions is needed to evaluate this aspect of the site.

The relatively steep bedrock and groundwater gradients south of the site suggest that pollution migration to the south is unlikely. These same conditions, however, enhance water movement in a northerly direction. It is important to note that although the surface topography of this region bears some resemblance to morainal topography elsewhere in the general area, the bedrock, overburden, and hydrologic conditions are entirely different. This emphasizes the value of geologic analyses that permit some degree of extrapolation from existing subsurface data in order to classify, analyze, and rank sites in preliminary studies. Expensive and random drilling appears to be the only alternative where such information does not exist.

Whether or not significant pollutants can be detected in surface drainage it may be necessary to obtain water samples from the subsurface where there could be less dilution by surface runoff. If pollutants are detected in significant quantities it would be advisable to further examine the near-surface hydrologic conditions which could provide a natural conduit for ground water to gain access to soils with variable permeabilities in the residential areas to the north.

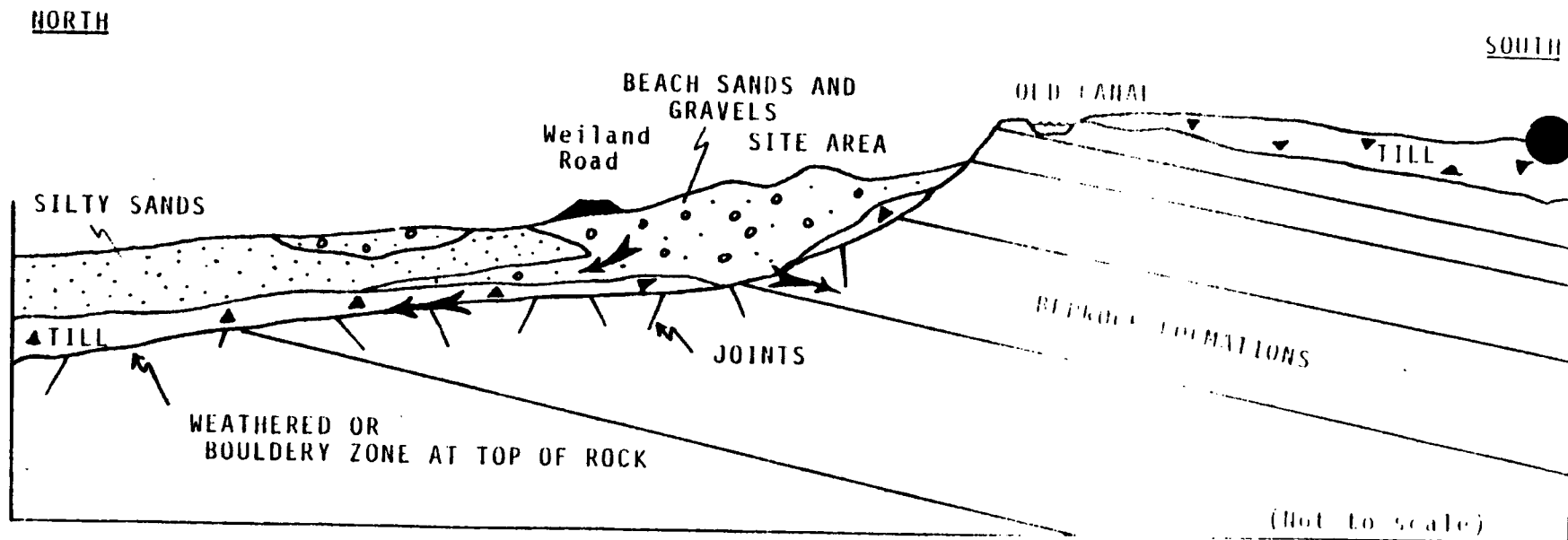
Additional information on general geology can be found in the report "Analysis of General Geologic and Geohydrologic Factors Relating to Landfill Locations in the Rochester East, Rochester West, West Henrietta, and Pittsford Quadrangles," prepared by the author on April 27, 1979 for the Monroe County Environmental Management Council.

Richard A. Young
November 8, 1979

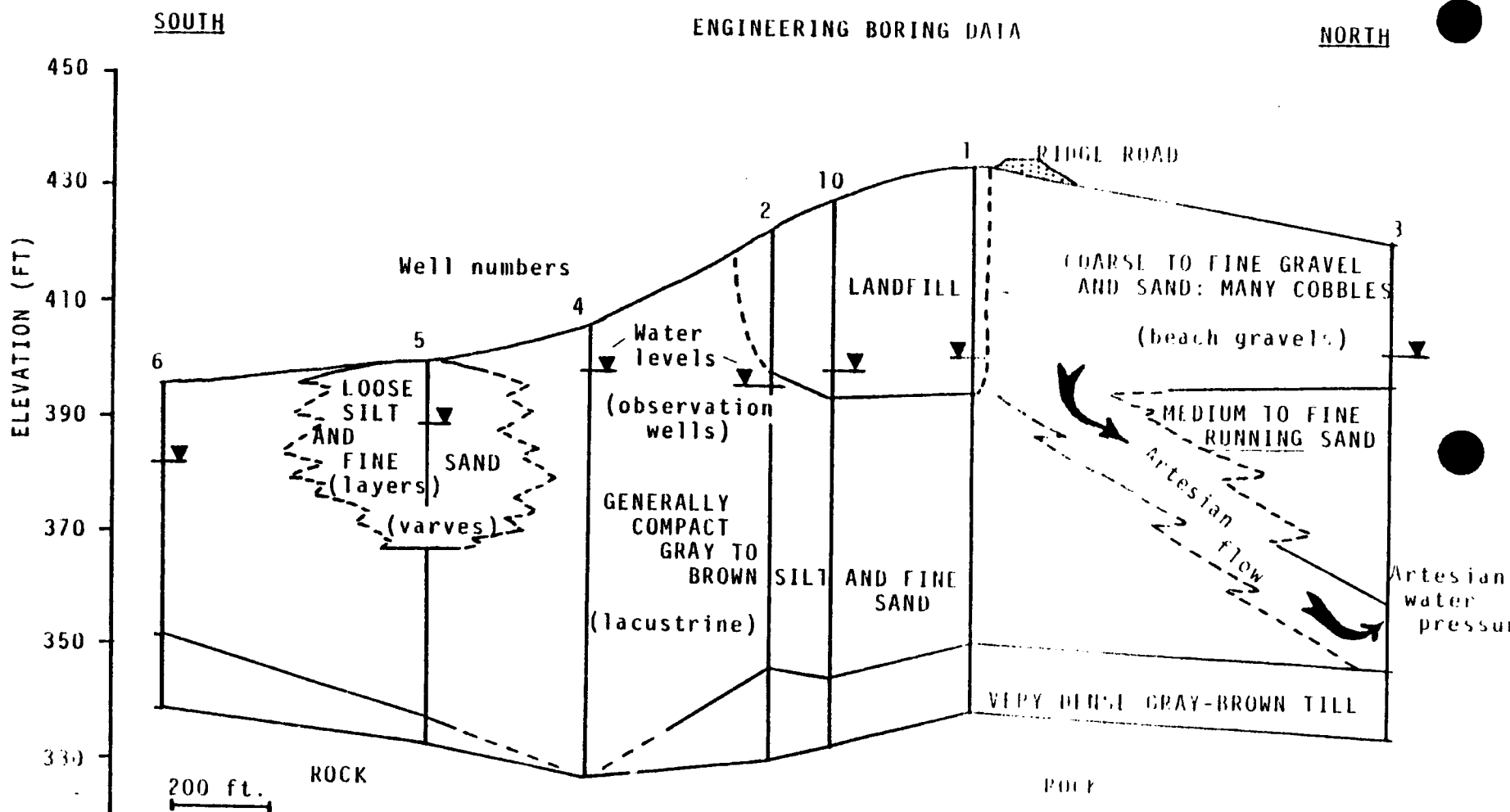
WEILAND ROAD SITE
DIAGRAMMATIC GEOLOGIC CROSS SECTION
ILLUSTRATING THE POSSIBLE RELATIONS BETWEEN GROUNDWATER
AND SURFICIAL DEPOSITS
PRIOR TO SITE DEVELOPMENT

(Heavy arrows denote subsurface groundwater migration)

-32-



CULVER-RIDGE SHOPPING CENTER SITE
INTERPRETATIVE GEOLOGIC CROSS SECTION BASED ON
SUBSURFACE



Interpretation based on boring data in: Groundwater Investigation Program
for Cross-Irondequoit Interceptor Contract II C-1A by TELLOR-DOBBINS
(Report dated January 1977)

Selected References for Landfill Monographs

- Wick, G.H., 1917, The Lake Deposits and Evolution of the Lower Irondequoit Valley: Proceedings of the Rochester Academy of Science, V5, pp. 123-160.
- NYSDOT, 1966, Genesee River Basin Study, Vol. V., Appendix I, Groundwater Studies, 102 p.
- Airchild, H.L., 1929, Geologic Story of the Genesee Valley and Western New York: Published by the Author, Rochester, New York. 216 p.
- Airchild, H.L., 1939, Glacial waters in Central New York: New York State Museum Bulletin 127, p. 1-62.
- Widebuck, 1973, New York State Geological Association Annual Meeting, Sections 4-11, Articles on Glacial and Bedrock Geology of Rochester Area.
- Hartnagel, C.A., 1907, Geologic Map of the Rochester and Ontario Beach Quadrangles: New York State Museum Bulletin 114, p. 1-35 with map.
- Leggette, R.M., Gould, L.O., Dollen, B.H., 1935, Ground Water Resources of Monroe County New York: Rochester, New York, Monroe County Regional Planning Board. 187 p.
- Wastewater Facilities Plan, 1976, Vol.V, Geotechnical Report. 55 p. plus appendices and maps. (Joint venture by Haley and Aldridge, Erdman and Anthony, Lozier Engineering, Inc., Seelye Stevenson Value and Knecht, Inc.).
- Miscellaneous Boring logs for Pure Waters contracts.
- Miscellaneous Boring logs from New York State Department of Transportation for major highways.

CONTROL NO: 02-8702-10	DATE: 6-10-87	TIME: 2:33 pm
DISTRIBUTION: Kodak Park Division Weiland 20 LF		
BETWEEN: Vince Dick	OF: NYDEC Avon office	PHONE: (716) 226-2466
AND: Lawa Ceforge NUS (NUS)		
DISCUSSION: RCRA required kodak to conduct a hydrogeological study on the inactive portion of the landfill and install monitoring wells on the active part of the LF kodak sample well quarterly in 1986-87 copy of the results was just submitted to USEPA Region 2 NYC. to Mr Andy Belina report dated May 28, 1987 Geologist Chris Proleup Engineer Laurie Lawrence--		
ACTION ITEMS:		

Priority Code: 4DSite Code: 8-28-002Name of Site: EASTMAN KODAK COMPANYRegion: 8County: MonroeTown/City (C) Rochester, N.Y.Street Address: Wentland Road (now Latchum Rd.)Status of Site Narrative: Active Landfill

- Industrial (some Residential) area. 3 dwellings: 200' ±
2 privately owned, 1 owned by KODAK
- Hillside topography
- Nearest Water Body: unnamed trib. to Paroy Hill Crk, 250' ±
* Chlorinated leachate drained, to trib. (open drainage ditch) until 1980.
- ~~Nearest W.S.: Rochester WWS 200' ±~~
- Approx. 5' to groundwater. Unknown proximity to known Aquit.
- Soil type: "ML" inorganic silts, fine sand
- ~~leachate continual problem~~
- ~~Additional geological and hydrological study needed~~

Type of Site: Open Dump ☐
Landfill ☒
Structure ☐Treatment Pond(s) ☐
Lagoon(s) ☐Number of Ponds _____
Number of Lagoons _____Estimated Size 28 AcresHazardous Wastes Disposed? Confirmed ☒ Suspected ☐

*Type and Quantity of Hazardous Wastes:

TYPE

QUANTITY (Pounds, drums,
tons, gallons)See attached sheets

*Use additional sheets if more space is needed.

KODAK: WEILAND ROLLANDFILL

<u>Waste Type + time</u>	<u>Quantity</u>
<u>Glass GRINDING SLURRY</u> 1958 to present 55% solid glass, ethylene glycol, H ₂ O	80 Tons / yr. Drummed
<u>Low Level RADIOACTIVE WASTES</u> 1958-1967	unknown quantity
a. Glass grindings w/ natural thorium 80% solid, 20% ethylene glycol + H ₂ O Placed in polyethylene bags & buried in wooden cribs	CRIBS # 1-3 and 19
b. Natural thorium oxide and other isotopes polyethylene bags or glass, buried in wooden cribs	CRIBS # 4, 6-15, 17 and 18
c. Tritium - sealed in steel pipe	site # 16
<u>Electroplating waste sludge</u> Heavy metal sludge: 34% solids w/ Ca, Mg, P, Ni, Cu, Fe, Zn, Cd and Ag and carbonates + hydroxides	600 Tons / yr
<u>Industrial Treatment Plant Sludge</u> 1957-1961 heavy metal sludge: 30% solids w/ Ag, Cd possibly Fe, Cr, Zn, Cd, Br, Cu	3140 Tons / yr.
<u>Alum sludge from water treatment plant</u> 1950-1977	480 Tons / yr.
<u>Grit from Industrial Treatment Plant</u> 1957 to present	1740 Tons / yr.
<u>Photograph Developer Liquor</u> one dump in early 1950s various organic + inorganic chemicals, solvents	50 Tons / once

WASTE TYPEQuantity

- Paper - coated with $\text{Ba}(\text{SO}_4)$
once in early 1950s

3000 Tons/once

7. Gelatin Plant Wastes

740 Tons/YR

Photograph emulsion solutions
production wastes (bone chips, grit, some solvents)

2. Asbestos Insulation

approx: 330 sq yds

From old piping

Placed in polyethylene bags & marked AS DANGEROUS

from 11/78 to 11/79

- 1. UnRinsed chemical glassware 1950-1979 small quantity
and empty bottles.

- 2. "Heavies" from bldg. 145 incinerators 1975-present 1400 T/year
wood, plastic, metal (2 contaminated)

- 3. Construction / Demolition Debris 1950-present 53,000 Tons/YR.

Fly Ash, wood, cinders

- 4. Non-combustible Rubbish 1950 to Present 6000 Tons/YR.
clean glass, non-recoverable cans
and pails

Name of Current Owner of Site: EASTMAN KODAK COMPANY 47-15-11(2/80)
Address of Current Owner of Site: 343 State Street
Rochester, N.Y. 14650

Time Period Site Was Used for Hazardous Waste Disposal:

1950 To 19 present

Is site Active ☒ Inactive ☐ see time periods for individual waste streams.
(Site is inactive if hazardous wastes were disposed of at this site and site was closed prior to August 25, 1979)

Types of Samples: Air ☐ Groundwater ☒ None ☐
Surface Water ☒ Soil ☒ ~~biological + hydrological testing~~

Remedial Action: Proposed ☐ Under Design ☐ ~~As soon as possible to assess and select for~~
In Progress ☐ Completed ☒ ~~monitoring wells~~
Nature of Action: ~~diversion of leachate to~~

Status of Legal Action: NONE State ☐ Federal ☐

Permits Issued: Federal ☐ Local Government ☐ SPDES ☒
Solid Waste ☒ Mined Land ☐ Wetlands ☐ Other ☒ AIR

Assessment of Environmental Problems:

Leachate collection system being collected and sent to wastewater treatment plant. Groundwater monitoring wells are being installed. Additional geological and hydrogeological study is underway

Assessment of Health Problems:

None known

Persons Completing this Form:

CAROL WITTENBERG, SR. ENG. TECH.
GDK

New York State Department of Environmental Conservation
Date

Ron Tram
John Orndorff

New York State Department of Health
Date

<u>Waste Type & Time</u>	<u>Quantity</u>
1. <u>Glass Grinding Slurry</u> 1958 to present 55% solids. glass, ethyleneglycol, H2O	80 tons/yr. Drummed
2. <u>Low Level Radioactive Wastes</u> 1958-1967 a. <u>Glass grindings w/natural thorium</u> 80% solid, 20% ethyleneglycol & H2O Placed in polyethylene bags & buried in wooden cribs. b. <u>Natural thorium oxide and other isotopes</u> polyethylene bags or glass, buried in wooden cribs. c. <u>Tritium-sealed in steel pipe</u>	Unknown quantity Cribs #1-3 and 19. Cribs #4,6-15,17 and 18. site #16
3. <u>Electroplating waste sludge</u> Heavy metal sludge: 34% solids w/CA, Mg, P, Ni, Cu, Fe, Zn, Cd and Ag and carbonates and hydroxides	600 tons/yr
4. <u>Industrial Treatment Plant Sludge</u> 1957-1961 heavy metal sludge: 30% solids w/Ag, Cd possibly Fe, CR, Zn, Cd, Br, CN	3140 tons/yr
5. <u>Alum Sludge From Water Treatment Plant</u> 1950-1977	480 tons/yr
6. <u>Grit From Industrial Treatment Plant</u> 1957 to present	1740 tons/yr
7. <u>Photograph Developer Liquor</u> one dump in early 1950's various organic and inorganic chemicals, solvents	50 tons/once
8. <u>Paper</u> - coated with Ba (SO4) <u>Once</u> in early 1950's	3000 tons/once
9. <u>Gelatin Plant Wastes</u> Photograph emulsion solutions production wastes (bone chips, grit, some solvents)	740 tons/yr
10. <u>Asbestos Insulation</u> From Old Piping placed in polyethylene bags and marked as <u>Dangerous</u>	Approx.: 330 sq. yds. From 11/78 to 11/79
11. <u>Unrinsed chemical glassware</u> 1950-1979 <u>and empty bottles.</u>	Small quantity
12. <u>"Heavies" from bldg. 145 incinerator</u> 1975-present wood, plastic, metal (2 contaminated)	1400 tons/year
13. <u>Construction/Demolition Debris</u> 1950-present Flt. Ash, wood, cinders	53,000 tons/year
14. <u>Non-combustible Rubbish</u> 1950-present clean glass, non-recoverable cans and pails	6000 tons/year

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER
FINAL REPORT

FINAL REPORT

RESULTS OF EXAMINATION

(PAGE 1 OF 1)

LAB ACCESSION NO: 04848 YR/MO/DAY/HR SAMPLE REC'D: 80/10/06/11

REPORTING LAB: 10 EHC ALBANY

PROGRAM: 650 SOLID WASTES

STATION (SOURCE) NO:

DRAINAGE BASIN: 03 NY GAZETTEER NO: 2754 COUNTY: MONROE

COORDINATES: DEG ' "N, DEG ' "W

COMMON NAME INCL SUBWISHED: KODAK-WEILAND RD LANDFILL LEACHATE PUMPED TO
KODAK'S INDUSTRIAL I.P.

EXACT SAMPLING POINT: MON. WELL #M2(3) CNTR. W. SIDE OUTS. BERM DRAW-T2N-1P

TYPE OF SAMPLE: 24 LEACHATE

MO/DAY/HR OF SAMPLING: FROM 00/00 TO 10/01/13

REPORT SENT TO: CO (1) RD (2) LPHE (1) LHO (0) FED (0) CHEM (1)

PARAMETER

UNIT

RESULT

NOTATION

110201 MANGANESE, TOTAL

MG/L

1.6

110001 IRON, TOTAL

MG/L

18.

309309 ARSENIC

MCG/L

10.

109401 BARIUM, TOTAL

MG/L

0.5

110601 SILVER, TOTAL

MG/L

0.02

LT

109701 CADMIUM, TOTAL

MG/L

0.02

109801 CHROMIUM, TOTAL

MG/L

0.1

LT

109901 COPPER, TOTAL

MG/L

0.07

110101 LEAD, TOTAL

MG/L

0.1

010309 MERCURY, TOTAL

MCG/L

0.4

LT

010901 ZINC

MG/L

0.05

112801 NICKEL, TOTAL

MG/L

0.05

DATE COMPLETED: 11/26/80

MR. G. DAVID KNOWLES, BUR. OF SOLID WASTES
N.Y.S. DEPT. OF ENVIRONMENTAL CONSERVATION
ROOM 401, 50 WOLF ROAD
ALBANY, N.Y. 12233

HAZARDOUS WASTE DISPOSAL SITE

INSPECTION REPORT

(Continued)

10. Change in classification?

YES

NO

Change from _____ to _____

Justification: _____

Sketch of Site

Western side of site

4N

Weiland Road

incomplete berm
OC2-A EK/DEC
OC2-B
OC2-C

pump
site

Completed Berm

ma(3) O
EK/DEC

m-1 O
EK

ma(2) O
EK/DEC

inactive LF are
currently being dug up
FOR berm material

- demolition debris
- empty containers

OC1-C
OC1-B

dirt, slag,
demolition debris

grey-white material
- supposedly concrete
Running down hill

Signed

Carol Herington

Date

10/2/80

Sampling Info.

10/1/80

Weiland Road LF - Koclake

C. Herington DEC } observers
D. Burton MCH O }

Sample Sites Split w/ DEC * ~~map sat~~ ^{Sample Sites listed} as referred to in EMC Report (map attached)

Monitoring Well # M2(3) - center on western edge of LF. Outside berm.

- Sample was silty, chemical odor detectable
- Samples taken below screen in well
- Sample time approx. 30 minutes, 12:30pm - 1:00pm

GW data

Site	Time	Depth to GW	Gallons in well	Sampling at	Depth to Bottom
M2(3)	Initial	10' 11"	2.2	2.2'	24'
	6 cal. in 15 min	16' 2"			
	8 cal. in 15 min.	16' 9"			

Records

Groundwater Data

- 1/29/80 - depth of GW = 10.88'
- 7/30/80 - depth of GW = 10.74'
- 8/1/80 - depth of GW = 10.70'
- 8/4/80 - depth of GW = 10.69'
- 8/4/80 - to bottom of well = 23.9'

- 2) Monitoring Well # M 2 (2) - mate of M 2 (3)
inside berm (center-western side of LF)
- Sample was silty, sulfur odor detectable as well as another chemical odor
 - Samples taken below screen in well
 - Sample time approx. 30 minutes, 1:45^{pm}-2:15^{pm}

G.W. data

Site	Time	Depth to G.W.	Gallons in well	Sampling at (')	Depth to Bottom
M 2 (2)	Initial	10' 11"	2.1	27'	29'
	"	15' 3"			

Recent G.W. data

1/29/80 depth to gw = 10.58'
7/30/80 " " " = 10.68'
8/1/80 " " " = 10.51'
8/4/80 " " " = 9.35'
8/4/80 depth to bottom of well = 29'

Phase I: Sampling of Weiland Road Groundwaters

Sixteen wellpoints, each to be sampled once only.

Analyses Required

1. Organics by G.C.M.S.

- a. benzene
- b. carbon tetrachloride ✓
- c. chlorobenzene
- d. 1, 2 - dichloroethane
- e. 1, 1, 1 - trichloroethane ✓
- f. chloroform
- g. 1, 2 - dichloropropane
- h. methylene chloride
- i. toluene
- j. trichloroethylene
- k. xylenes
- l. 1, 1-dichloroethene
- m. p-dioxane
- n. pentachlorophenol
- o. phenol

2. Metals

cadmium
copper
silver
iron
lead
nickel
manganese
chromium
zinc
barium
mercury
arsenic

3. Acid Magenta

4. Total Cyanide

5. Conventional Groundwater Parameters

- a. total dissolved solids (TDS)
- b. conductivity
- c. pH
- d. total organic carbon (TOC)
- e. nitrates
- f. sulfates

6. Major Constituents Test

~~Five glass jars - radiology~~

/kac
9/2/80

7 Scintillation for radiological analysis
[tritium & thorium]

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SEP 10 1980
SOLID WASTE
DEC. REG. #3

DEC
analysis

0077

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER
FINAL REPORT

FINAL REPORT

FINAL REPORT

RESULTS OF EXAMINATION

(PAGE 1 OF 1)

LAB ACCESSION NO: 04847 YR/MO/DAY/HR SAMPLE REC'D: 80/10/06/11

REPORTING LAB: 10 EHC ALBANY

PROGRAM: 650 SOLID WASTES

STATION (SOURCE) NO:

DRAINAGE BASIN: 03 NY GAZETTEER NO: 2754 COUNTY: MONROE

COORDINATES: DEG ' "N, DEG ' "W

COMMON NAME INCL SUBMISHED: KODAK-WEILAND RD LANDFILL LEACHATE PUMPED TO
KODAK'S INDUSTRIAL T.P.

EXACT SAMPLING POINT: MUN. WELL #C2-A NW CORN. IF OUTSIDE BERM DRAW 3P-4P

TYPE OF SAMPLE: 24 LEACHATE

MO/DAY/HR OF SAMPLING: FROM 00/00 TO 10/01/16

REPORT SENT TO: CO (1) RO (2) LPHE (1) LHO (0) FED (0) CHEM (1)

PARAMETER

UNIT

RESULT

NOTATION

110201 MANGANESE, TOTAL

MG/L

0.07

110001 IRON, TOTAL

MG/L

0.24

309309 ARSENIC

MCG/L

10.

LT

109401 BARIUM, TOTAL

MG/L

0.5

LT

110601 SILVER, TOTAL

MG/L

0.02

LT

109701 CADMIUM, TOTAL

MG/L

0.02

LT

109801 CHROMIUM, TOTAL

MG/L

0.1

LT

109901 COPPER, TOTAL

MG/L

0.05

LT

110101 LEAD, TOTAL

MG/L

0.1

LT

010309 MERCURY, TOTAL

MCG/L

0.4

LT

010901 ZINC

MG/L

0.05

LT

112801 NICKEL, TOTAL

MG/L

0.05

LT

DATE COMPLETED: 11/26/80

MR. G. DAVID KNOWLES, BUR. OF SOLID WASTES
N.Y.S. DEPT. OF ENVIRONMENTAL CONSERVATION
ROOM 401, 50 WOLF ROAD
ALBANY, N.Y. 12233

0076

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER
FINAL REPORT

FINAL REPORT

FINAL REPORT

RESULTS OF EXAMINATION

(PAGE 2 OF 2)

LAB ACCESSION NO: 04846 YR/MO/DAY/HR SAMPLE REC'D: 00/10/06/11

REPORTING LAB: 10 EHC ALBANY

PROGRAM: 650 SOLID WASTES

STATION (SOURCE) NO:

DRAINAGE BASIN: 03 NY GAZETTEER NO: 2754 COUNTY: MONROE

COORDINATES: DEG 1 "N, DEG 1 "W

COMMON NAME INCL SUBMITTED: KODA-WEILAND RD LANDFILL (LEACHATE PUMPED TO
KODAK'S INDUSTRIAL T.P.) GREECE

EXACT SAMPLING POINT: MON. WELL #M2(2) CNTR. W. SIDE INSIDE BERM DRAW 1P-29

TYPE OF SAMPLE: 24 LEACHATE

MO/DAY/HR OF SAMPLING: FROM 00/00 TO 10/01/14

REPORT SENT TO: CO (1) RO (2) LPHE (1) LHO (2) FFD (2) CHEM (1)

PARAMETER	UNIT	RESULT	NOTATION
109701 CADMIUM, TOTAL	MG/L	0.02	

DATE COMPLETED: 11/26/80

MR. G. DAVID KNOWLES, BUR. OF SOLID WASTES
N.Y.S. DEPT. OF ENVIRONMENTAL CONSERVATION
ROOM 401, 50 WOLF ROAD
ALBANY, N.Y. 12233

0075

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER
FINAL REPORT

cc: Bob Phaneuf
Carol's file

FINAL REPORT

FINAL REPORT

RESULTS OF EXAMINATION
(PAGE 1 OF 2)

File: Kodak-Weiland
Road.
MONROE Co.
Reg # 8

LAB ACCESSION NO: 04846 YR/MO/DAY/HR SAMPLE REC'D: 80/10/06/11

REPORTING LAB: 10 EHC ALBANY
PROGRAM: 650 SOLID WASTES
STATION (SOURCE) NO:
DRAINAGE BASIN: 03 NY GAZETTEER NO: 2754 COUNTY: MONROE
COORDINATES: DEG ' "N, DEG ' "W
COMMON NAME INCL SUBWISHED: KODAK-WEILAND RD LANDFILL (LEACHATE PUMPED TO
KODAK'S INDUSTRIAL T.P.) GREECE
EXACT SAMPLING POINT: MON. WELL #M2(2) CNTR. W. SIDE INSIDE BERM DRAW 1P-29
TYPE OF SAMPLE: 24 LEACHATE
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 10/01/14
REPORT SENT TO: CO (1) RO (2) LPHE (1) LHO (0) FED (0) CHEM (1)

PARAMETER	UNIT	RESULT	NOTATION
110201 MANGANESE, TOTAL	MG/L	3.1	
110001 IRON, TOTAL	MG/L	21.	
309309 ARSENIC	MCG/L	48.	
109401 BARIUM, TOTAL	MG/L	1.5	
110601 SILVER, TOTAL	MG/L	0.02	
109709			NR
109801 CHROMIUM, TOTAL	MG/L	0.1	LT
109901 COPPER, TOTAL	MG/L	0.09	
110101 LEAD, TOTAL	MG/L	0.4	
010309 MERCURY, TOTAL	MCG/L	0.4	LT
010901 ZINC	MG/L	0.10	
112801 NICKEL, TOTAL	MG/L	0.17	

DATE COMPLETED: 11/26/80

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DEC 4 1980

MR. G. DAVID KNOWLES, BUR. OF SOLID WASTES
N.Y.S. DEPT. OF ENVIRONMENTAL CONSERVATION
ROOM 401, 50 WOLF ROAD
ALBANY, N.Y. 12233
HAZARDOUS WASTE MANAGEMENT PROGRAMS

FASTMAN KODAK REFUSE DISPOSAL AREA

GREECE (T) MONROE (C)

Information Dossier 79.11

April 11, 1979

Office of Toxic Substances
New York State Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233

Statement of the Problem

Records of this office indicate that the Eastman Kodak Refuse Disposal Area, located on the southeast corner of the intersection of Weiland and Latona Roads in the Town of Greece, has been in operation since the mid-1950's. Presently, the site is used for the disposal of demolition debris, fly ash, cinders, and a small quantity of rubbish, glass, and non-recoverable cans and containers. Operations, other than land disposal, at the landfill site include: 1) A wood recycling program. 2) A screening operation which recycles material that had been previously landfilled on the disposal site. This material will be used as a sub-base fill for roadways. 3) A burial site for low level radioactive ground glass sludge containing natural thorium. All other industrial waste material generated at the Eastman Kodak complex is either incinerated at the facility, or transported off site to an acceptable receiving station for disposal or reclaiming.

Extent of the Problem (see attached sketches)

The site consists of 28 acres completely fenced and access is restricted to Kodak employees only.

Located down gradient from the disposal site are three residences, two of which are presently occupied and all within 500 ft. of the boundary of the landfill, the third is owned by Kodak. A chlorination station, located between the site and the dwelling is used for collecting and chlorinating leachate produced in the refuse area. Only one of the two occupied houses uses a well for water. This same home (635 Weiland Road) has a basement sump that apparently runs frequently. There are other wells in the vicinity of the landfill at 145 and 250 Latona Road further north.

Health Effects

Currently, no adverse health effects can be associated with the Kodak site.

Environmental Effects

The receiving stream is an unnamed trib of Paddy Hill Creek. DEC's Pollution Unit conducted a stream survey of the area immediately downstream of the landfill discharge during the summer of 1978. The stream bottom was completely void of any bottom organisms. It is not clear whether this lack of bottom life was due to the leachate or the extremely high chlorine doses that were being introduced. Chlorine residuals of 15 ppm were not uncommon.

Management Status

Kodak has employed a consulting engineer (Dames & Moore) to conduct groundwater and surface water studies to determine the origin of the water causing the leachate. Extensive analysis has been conducted on the leachate to determine its composition for subsequent treatment, these results should be reflected in a SPDES permit which has been applied for and is being processed.

However, the company is proposing to expand the solid waste disposal facility and relocate the collection and treatment facilities to the northern portion of the property, resulting in a new point of discharge. The company has rejected the effluent limitations proposed in the draft SPDES permit, which were based on class "D" stream standards. Efforts are currently underway to satisfy the company's objections, so that the permit can be issued. Also, the county is proposing to relocate Lee/Latona Road to the east, using landfill materials for construction of the embankment. This road would be constructed over the existing landfill (above the existing chlorination tank in the radioactive glass burial portion of the landfill), using in part, a permanent easement on Kodak property. The permit review for the SPDES permit will be coordinated with the solid waste permits.

A Part 360 permit has also been applied for with extensive design and operating changes to eliminate or reduce leachate production. Continued follow-up on the permit application is proposed, with additional water monitoring at #635 Weiland Road and certain monitoring wells utilized by Dame & Moore during their study. Analysis of permit conformance samples is to be done by DEC labs.

For more information, contact:

Mr. Frank Clark
New York State Department of
Environmental Conservation
Region 8 Headquarters
P.O. Box 57
Avon, New York 14414

(716) 226-2466

Information Dossier prepared: April 11, 1979

PADDY HILL
CREEK

MAIDEN LANE

GREECE OLYMPIA
HIGH SCHOOL

FETZNER RD.

RIDGE ROAD

HOUSE
#250

HOUSE
#145

ROUTE 47

OPEN
DRAINAGE
DITCH

N

LATONA ROAD

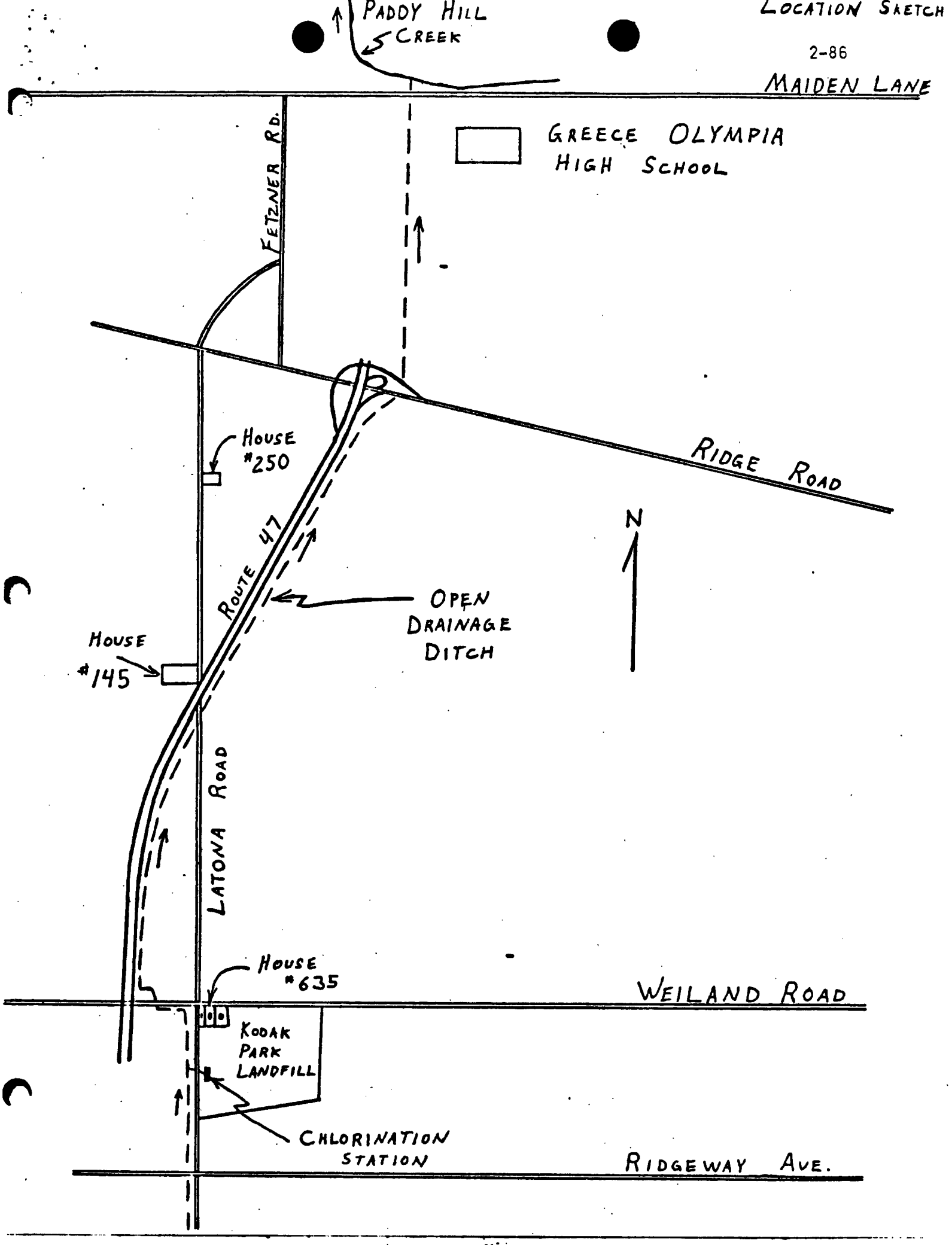
HOUSE
#635

WEILAND ROAD

KODAK
PARK
LANDFILL

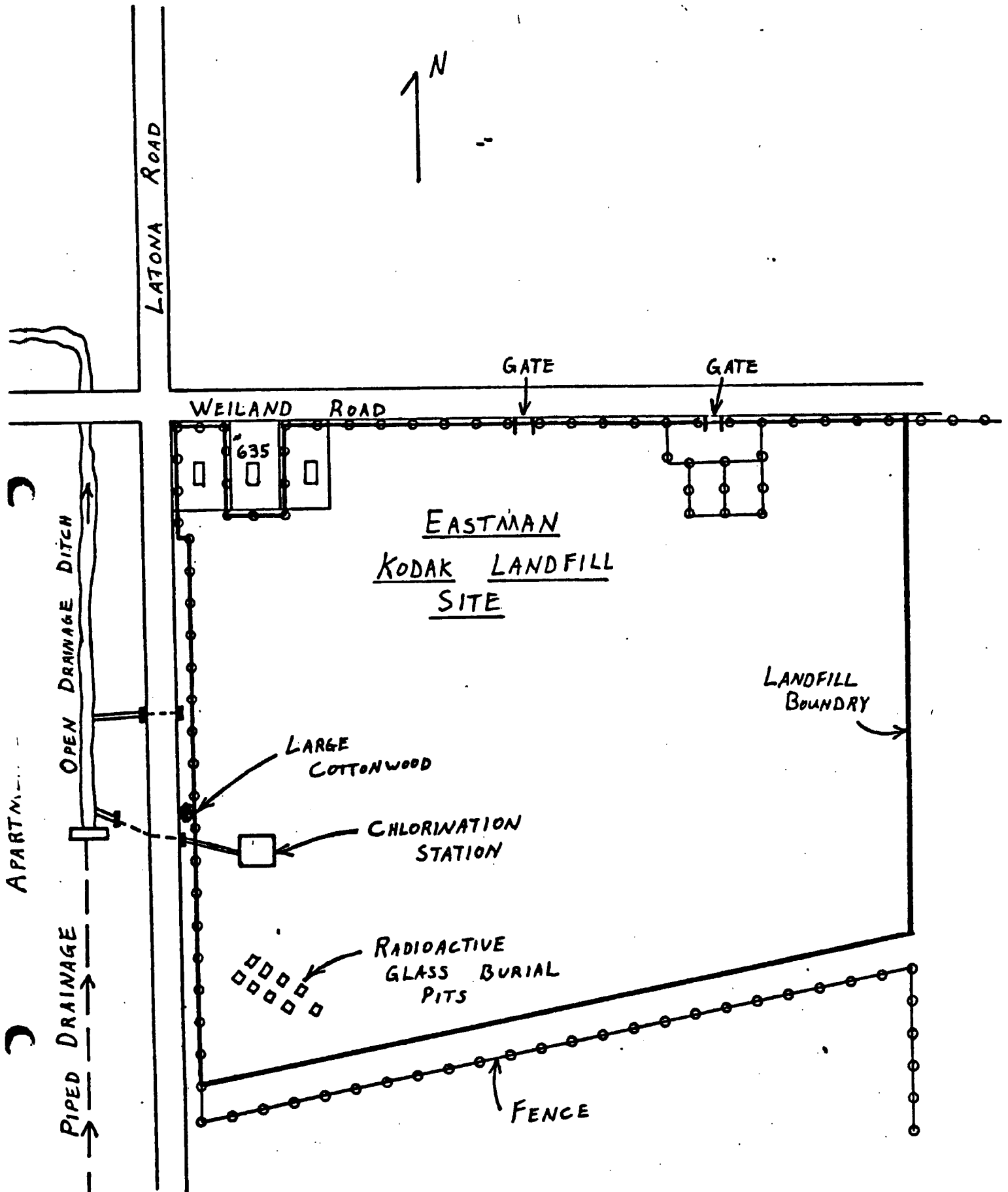
CHLORINATION
STATION

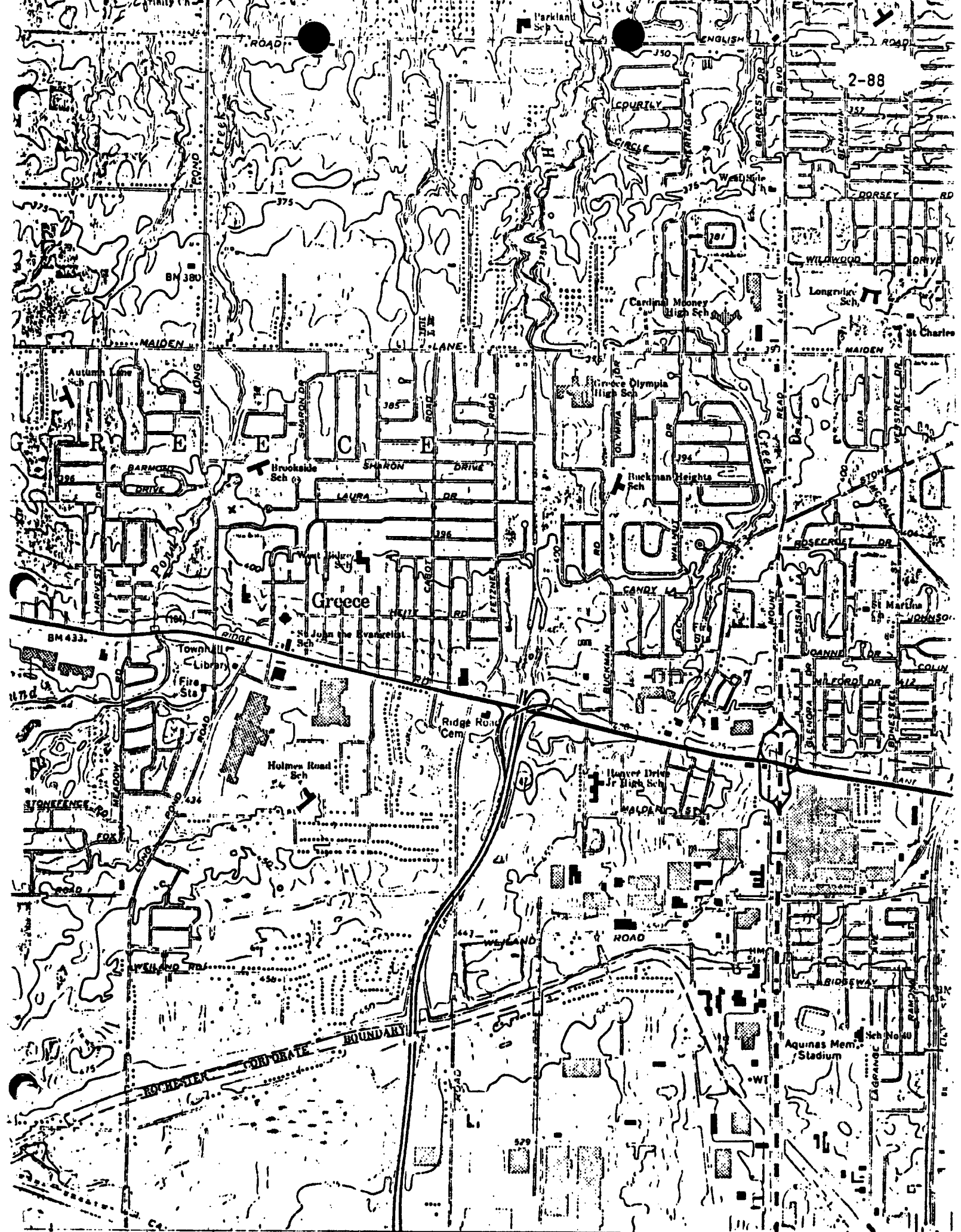
RIDGEWAY AVE.



SKETCH MAP

EASTMAN KODAK LANDFILL 2-87
& SURROUNDINGS





Eastman Kodak Refuse Disposal Area
Greece (T) Monroe (C)

STATEMENT OF THE PROBLEM

Records of this office indicate that the Eastman Kodak Refuse Disposal Area, located on the southeast corner of the intersection of Weiland and Latona Roads in the Town of Greece, has been in operation since the mid-1950's. Presently, the site is used for the disposal of demolition debris, fly ash, cinders, and a small quantity of rubbish, glass, and non-recoverable cans and containers. Operations, other than land disposal, at the landfill site include: 1) A wood recycling program. 2) A screening operation which recycles material that had been previously landfilled on the disposal site. This material will be used as a sub-base fill for roadways. 3) A burial site for low level radioactive ground glass sludge containing natural thorium. All other industrial waste material generated at the Eastman Kodak complex is either incinerated at the facility or transported off site to an acceptable receiving station for disposal or reclaiming.

EXTENT OF THE PROBLEM (see attached sketches)

The site consists of 28 acres completely fenced and access is restricted to Kodak employees only.

HEALTH EFFECTS

Located down gradient from the disposal site are three residences, two of which are presently occupied and all within 500 ft. of the boundary of the landfill, the third is owned by Kodak. A chlorination station, located between the site and the dwelling is used for collecting and chlorinating leachate produced in the refuse area.

Only one of the two occupied houses uses a well for water. This same home (635 Weiland Road) has a basement sump that apparently runs frequently. There are other wells in the vicinity of the landfill at 145 and 250 Latona Road further north.

ENVIRONMENTAL EFFECTS

The receiving stream is an unnamed trib of Paddy Hill Creek. DEC's Pollution Unit conducted a stream survey of the area immediately downstream of the landfill discharge during the summer of 1978. The stream bottom was completely void of any bottom organisms. It is not clear whether this lack of bottom life was due to the leachate or the extremely high chlorine doses that were being introduced. Chlorine residuals of 15 ppm were not uncommon.

MANAGEMENT STATUS

Kodak has conducted groundwater and surface water studies to determine the origin of the water causing the leachate. Extensive analysis has been conducted on the leachate to determine its makeup for treatment. A SPDES permit has been applied for and is being processed. Treatment of the leachate will be necessary to meet the SPDES discharge limits. A Part 360 permit has been also applied for with extensive design and operating changes to eliminate or reduce leachate production. Continued follow-up on the present permit applications is necessary. It is also felt that some additional water monitoring be conducted in house #635 Weiland Road and any water monitoring wells placed at the site by Kodak during their hydrogeological studies. Analysis should be conducted by DEC labs after a monitoring plan has been agreed upon by Kodak, Monroe County Health Department and DEC.

1/11/79

LOCATION SKETCH

PADDY HILL
CREEK

MAIDEN LANE

GREECE OLYMPIA
HIGH SCHOOL

FETZNER RD.

RIDGE ROAD

HOUSE
#250

HOUSE
#145

ROUTE 47

OPEN
DRAINAGE
DITCH

N

LATONA ROAD

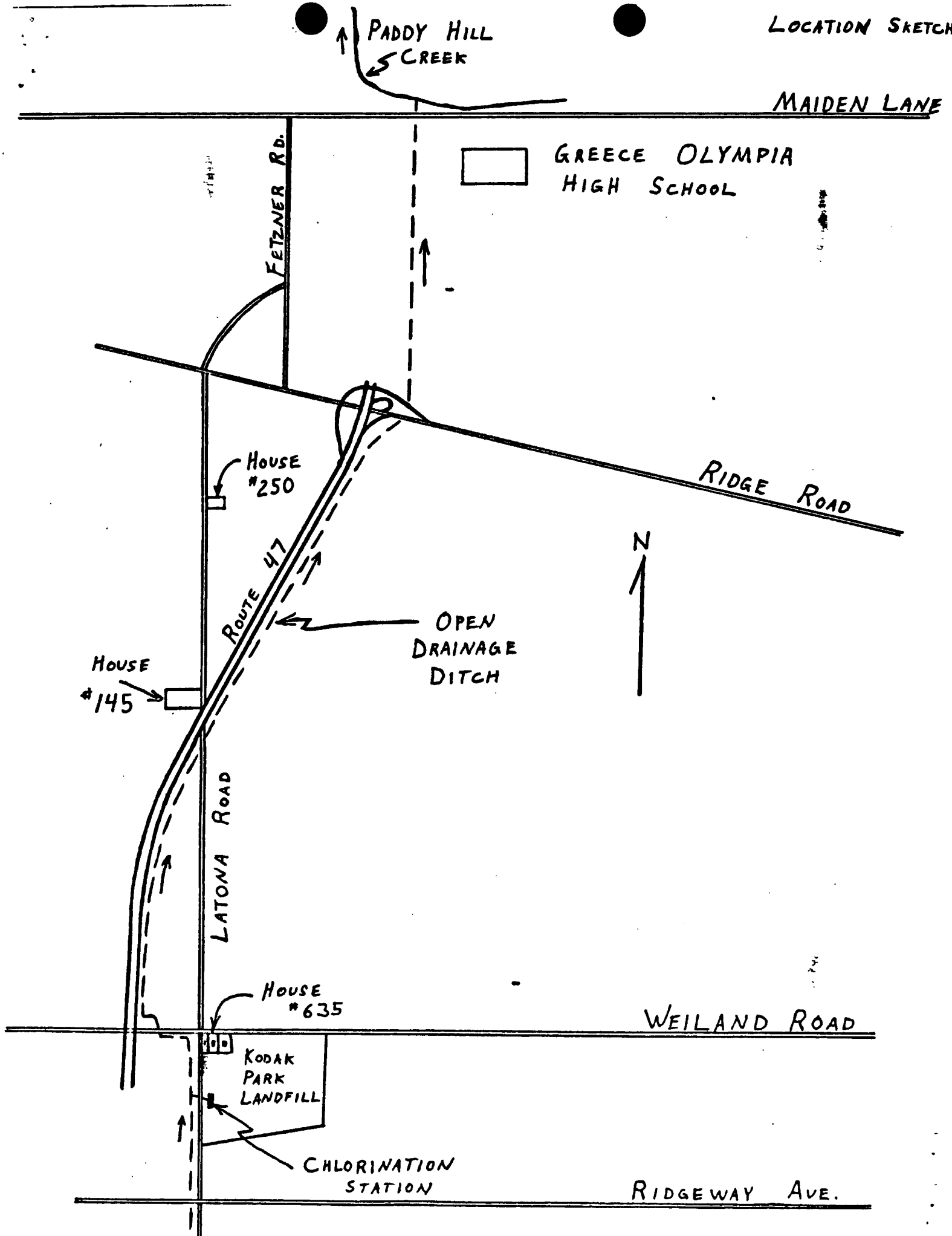
HOUSE
#635

KODAK
PARK
LANDFILL

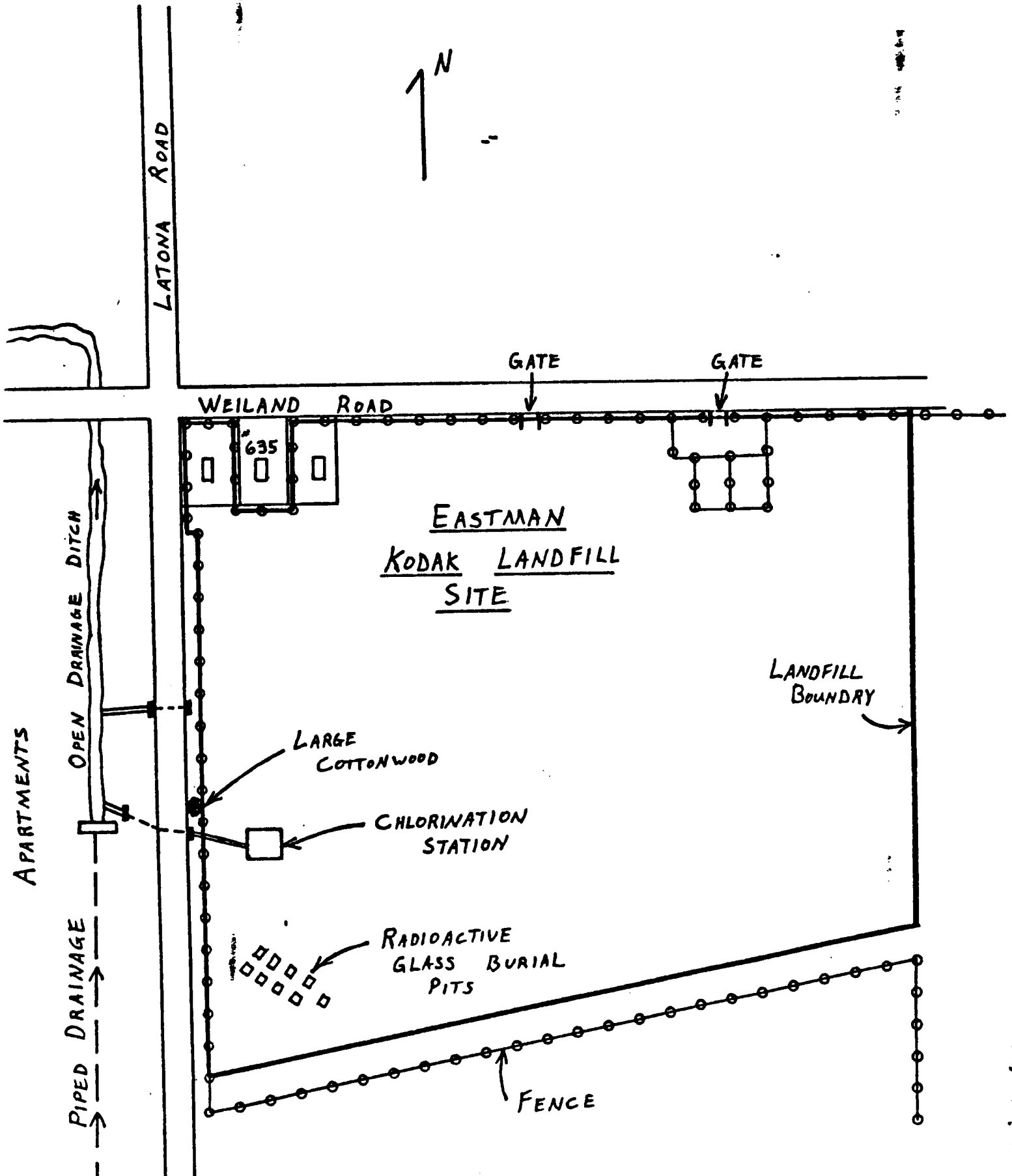
CHLORINATION
STATION

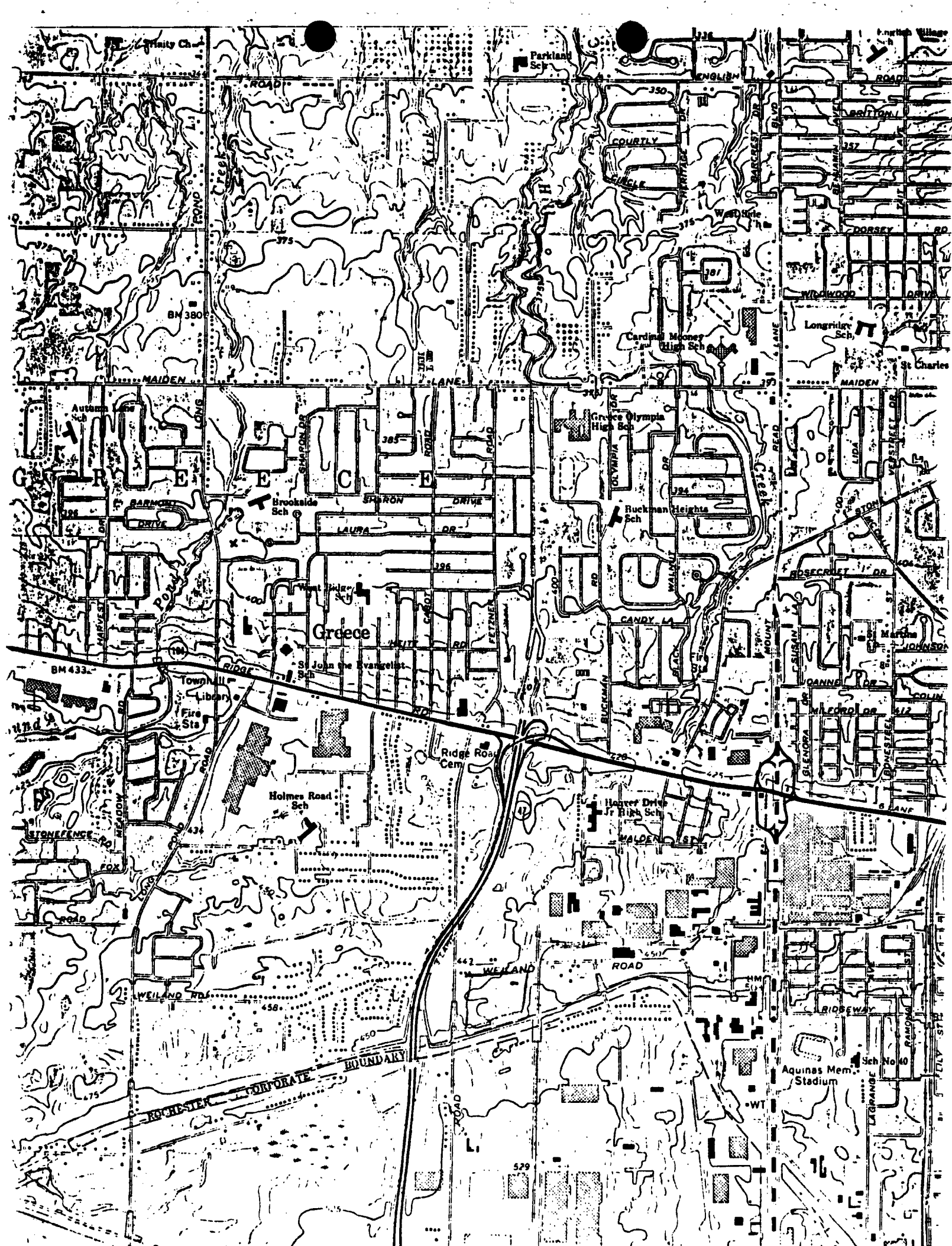
WEILAND ROAD

RIDGEWAY AVE.



SKETCH MAP
EASTMAN KODAK LANDFILL
& SURROUNDINGS





INSPECTION REPORT

Region 8: Unofficial Worksheets

Inspector CAROL HERINGTON Title SR. Eng. Tech.

Date October 1, 1980

Site Name KODAK - Weiland Road Landfill

Site Code 8-28 - 002 Priority Classification D

Site Location South of Weiland Road, East of Latona Road

Town/City (T) Greece County MONROE

1. Site ☒ ACTIVE or ☐ INACTIVE?

2. Current and Past Site Owners?

Eastman Kodak Co. From 1950 To Present

From To

From To

3. Exposed wastes? demolition debris, slag, containers

4. Vegetation? some weeds, good growth on berms

5. Leachate observed? in monitoring wells

6. Odor and/or eye irritation? NO

7. Condition or nearby surface water (if applic.)?

8. Remarks Observed samples at 5 monitoring wells
split samples at 3 sites. Are currently working
on berms. Have removed alot of wastes now classified
as hazardous.

9. Recommended follow-up action?

☒ YES

☐ NO

☒ Sampling Periodic
☐ Geohydrological Study

☐ Historical Research, Inc. aerial photos

☐ Written request for add'l info
to

- Progress being made on site cleanup.
- Leachate now pumped into King's Landing Indust. Wtft.
- Operation looks OK

Monitoring Well # C2-H

outside berm - NW

corner of fill - prior to pump station -

One in. cluster of three

- Sample very clear - no ~~strong~~ detectable odors
- Samples taken below screen in well
- Sample time approx. 30 minutes, 3:10^{PM} - 3:40 PM

G.W. data

<u>Site</u>	<u>Time</u>	<u>Depth to G.W.</u>	<u>Gallons in Well</u>	<u>Sampling at (')</u>	<u>Depth to Bottom</u>
C2-H	Initial	12'3"	18.6	38'	40.2'
	5 gal. in 7 min.	15'1"			
	10 gal. in 16 min.	15'5"			
	5 gal. in 17 min.	16'0"			

Recent G.W. data

7/29/80 - depth to G.W. = 11.97'

7/30/80 - " " " = 12.00'

8/1/80 - " " " = 12.06'

8/4/80 - " " " = 13.41'

8/4/80 - depth to bottom of well = 40.2'

Background data on other wells

started to sample C2-C, insufficient sample, aborted and went to C2-A

Site	Time	Depth to GW	Gallons It AD	Sample at	Depth to Bottom
C2-C	Initial	13'6"	2.3	26'	27.7'
*	1.5 gal. in 6 min.	21'4"			

Aborted - insufficient sample

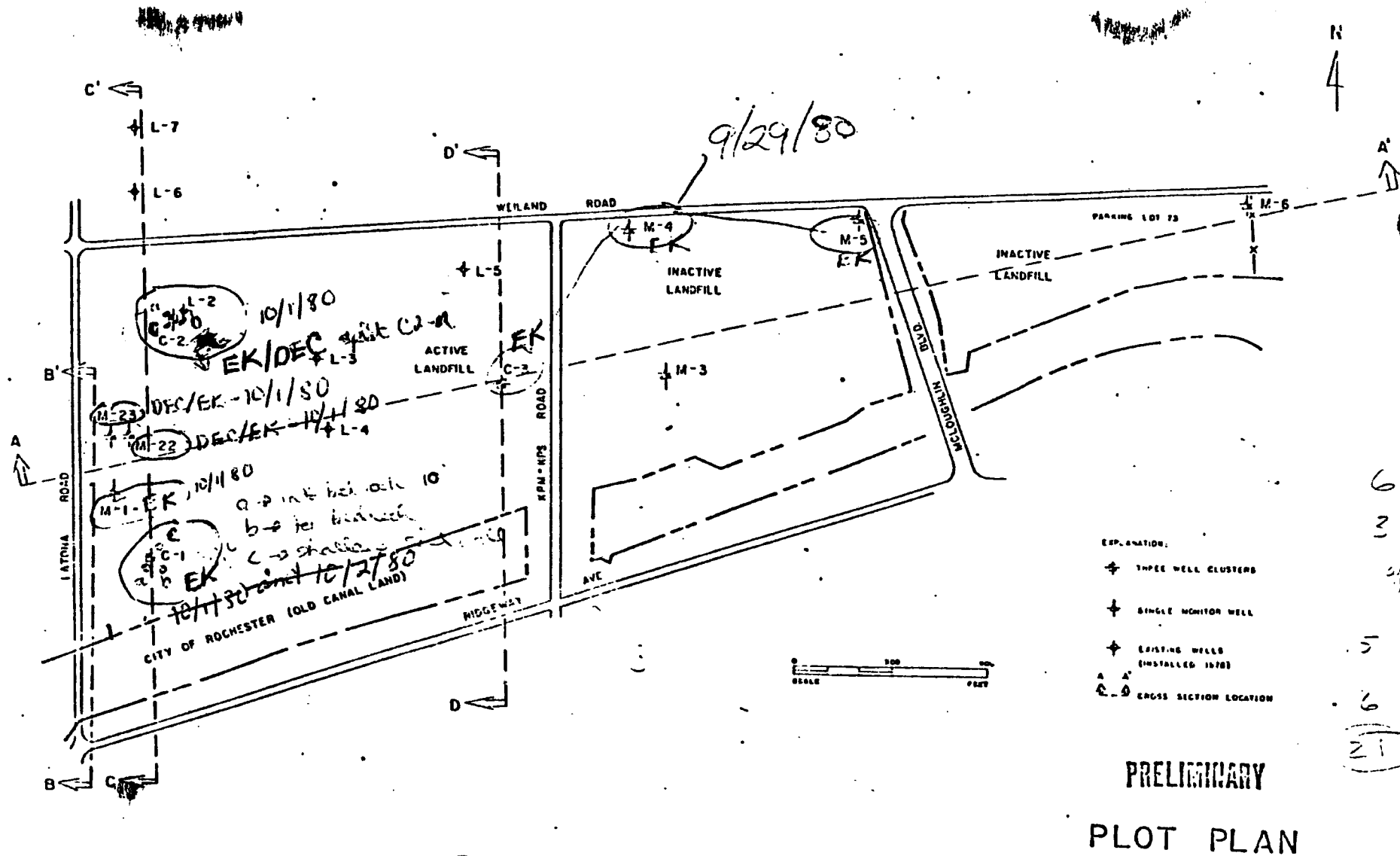
G.W. data on C2-B and C2-C

	C2-B	C2-C
7/29/80 - depth to GW =	13.47'	13.27'
7/30/80 - " " " =	13.53'	13.17'
8/1/80 - " " " =	13.65'	13.24'
8/4/80 - " " " =	13.41'	13.17'
* 8/4/80 - depth to bottom of well =	23.7'	27.7'

background data on other wells

Kodak sampled at C1-A, C1-B, C1-C. C1-C was aborted → insufficient water w/ a lot of solids, dark brown to black color, kept plugging

Site	Time	Depth to G.W.	Gallons in Well	Sampling at	Depth to bottom
C1-A	Initial	13'4"	5.8'	45'	48'8"
	5 gallons in 15 min.	13'6"			
	10 gallons in 32 min.	13'8"			
C1-B	Initial	11'11"	3.2'	2.8'	32'
	3 gal. in 16 min * very slow	11'6"			
C1-C * ABORTED	Initial	12'3"	0.5*	15'	16.8'



References: Kistal Drawings KPM-68236 (3-14-57) and
KPM 1519316 (9-12-60 rev. 11/02/64).

Figure 7

CAMERON